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Department of Archaeology and Ancient Indian History, Deccan College,
University of Poona
Publication No. 1

FROM HISTORY TO PRE-HISTORY

AT

NEVASA

(1954-56)

By

HASMUKH DHIRAJLAL SANKALIA
SHANTARAM BHALCHANDRA DEO
ZAINUDDIN DAWOOD ANSARI
SOPHIE EKHARDT

POONA : 1960

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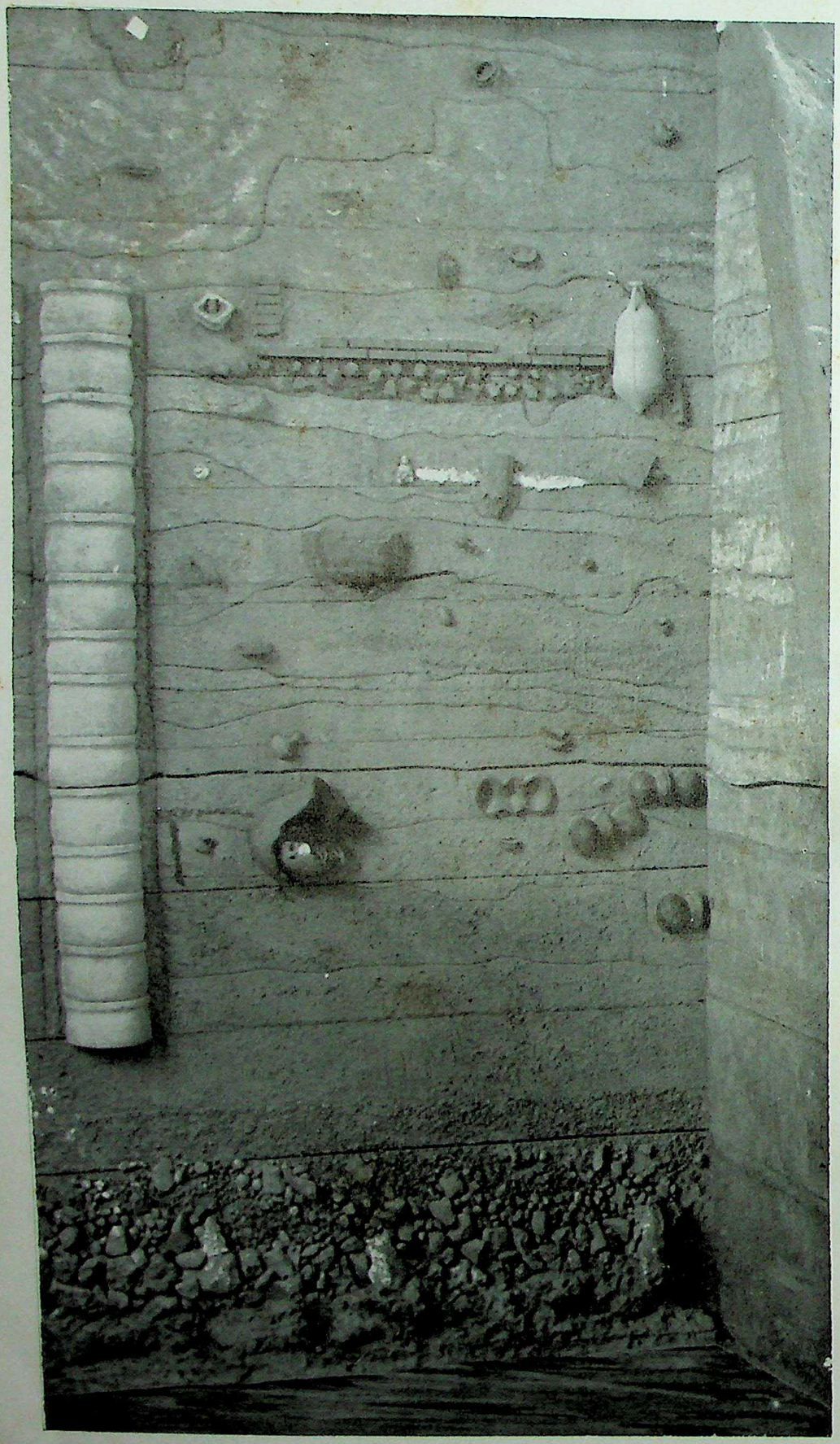

Fig. 1 : Frontispiece: From History to Prehistory at Nevasa.
Model of a section now in the National Museum, New Delhi.
I Early Palaeolithic; II Middle Palaeolithic; III Chalcolithic;
IV Early Historic; V Indo-Roman; VI Muslim-Maratha.

For details see pp. 64-70.

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AT

NEVASA

(Report on the Excavations and Explorations in and around Nevasa 1954-56)

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Department of Archaeology and Ancient Indian History, Deccan College
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FROM HISTORY TO PRE-HISTORY

AT

NEVASA

(1954-56)

By

H. D. Sankalia **S. B. Deo**

and

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Deccan College Postgraduate & Research Institute, Poona 6.

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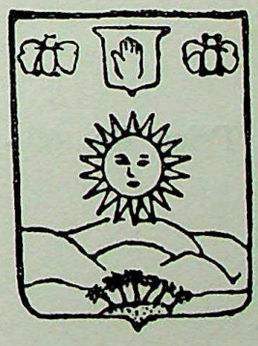

POONA : 1960

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Code No. M 59.

First Edition: 500 copies, August 1960.

Printed at cost of subvention from the University Grants Commission

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PRINTED BY S. RAMU AT THE COMMERCIAL PRINTING PRESS PRIVATE LIMITED, 34–38, BANK STREET, FORT, BOMBAY 1 AND PUBLISHED BY DR. S. M. KATRE, DIRECTOR, DECCAN COLLEGE POST-GRADUATE AND RESEARCH INSTITUTE, POONA 6.

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To

SHRĪ JNĀÑEŚVARA

—तरी न्यून तें पुरतें । अधिक तें सरतें ।
करुनि घ्यावें हें तुमतें । विनवितु असें ॥

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FOREWORD

The Report on Nevasa Excavations, which have been going on for several years under the direction of Dr. H. D. SANKALIA of the Deccan College, Poona, is now being presented to the public. I am sure that scholars of Archaeology and Indology, as well as the lay students of human civilization, will be deeply interested in the descriptive and reconstructive parts of Dr. SANKALIA's report. It is possible that the many and excellent illustrations contained in the report will be even more widely appreciated.

It is a rare event indeed to have on one and the same site convincing proofs of advancing human life extending over nearly 150,000 years. The several arguments which Dr. SANKALIA has urged in support of his analysis will no doubt be judged on their merits by competent scholars. But the facts that the Godavari and the Pravara rivers offered a hospitable reception to migrants from the North played an important part in the continuing story of human habitation of an area, which was richly endowed by nature to support all forms of life. Several sociological, historical and biological theories may be tested further in the light of data supplied by Nevasa excavations.

Ever since the officers of the Western Circle of the Indian Department of Archaeology located the likelihood of profitable excavation in and around Nevasa, several influences have combined to promote the project. These, both Indian and foreign, have been suitably acknowledged by Dr. SANKALIA in his Introduction. But, I am sure, all of us will on this occasion recall with gratitude the initial encouragement of Shri B. G. KHER. He was attracted by the prospect of learning a little more of the life and times of the great Maharashtra saint, Shri Jñāneśvara Mahārāj, who lived in Nevasa in the thirteenth century. As the excavations show, the days in which the saint lived represented an advanced social culture, and that before his time and after it several vicissitudes were witnessed by those who lived there. But it cannot be denied that in the perspective of 150,000 years it has been a record of progressive achievement and civilization. If there is any truth in the doctrine of survival by strength, the story revealed by the records herein presented by Dr. SANKALIA should have great significance for the future, as well as for the past.

Poona,
19th April, 1960.

D. G. KARVE
Vice-Chancellor.

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INTRODUCTION

Discovery

Nevasa is known throughout Maharashtra as the place where Shrī Jñāneśvara wrote his commentary on the *Gītā*, known popularly as *Jñāneśvarī*, but called *Jñānadevī* by the author himself. Its discovery, however, as a promising Chalcolithic site is due to Shri M. N. DESHPANDE and his assistants of the Department of Archaeology, Government of India, Western Circle, when it was located in Poona. Regular explorations in search of Chalcolithic sites in the Godavari-Pravara valleys were undertaken after the discovery of Jorwe and Nasik. And thus Nevasa and other sites were brought to light.

Objects of the Excavation

However, the immediate cause that led to the excavation at Nevasa was the desire of the late Shri B. G. KHER, then Chief Minister of Bombay State, to know something about Shri Jñāneśvara and his times by excavations at this place. This desire was conveyed both to the Deccan College as well as to Shri DESHPANDE. And it was one time planned to have a joint excavation, but ultimately it was left to the Deccan College to carry out the work. Before undertaking the work an exploration tour of all the sites discovered in the Pravara valley was made by Dr. (Mrs.) Iravati KARVE and myself. It was found during this tour that of all the Chalcolithic sites then known in this region, that of Lādmod at Nevasa was the largest, best preserved (in spite of earth-grabbers' pits), and the most promising. Accordingly it was decided to excavate at this site.

Financial Assistance

Permission for excavation was kindly granted by Shri A. GHOSH, Director General of Archaeology in India, as well as by the Government of Bombay, at the instance of Dr. P. M. JOSHI, Director of Archives and Ancient Monuments. Dr. JOSHI also assisted the excavation by subvention from his Department in 1954-55 and 1955-56. However, the principal financial help was received from the University of Poona on behalf of which the work was done by the Deccan College.

Mr. B. J. BEASLY, President of the Institute of Archaeology, Australia, being pleased with the work of the Deccan College made a spontaneous donation for the exploration.

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So to these Institutions and authorities I am deeply grateful for their grants, which however small, helped us in the excavations, explorations and in preparing the Reports thereon.

Excavation and Exploration

Dr. S. B. DEO not only shared with me the task of planning and supervising, but looked after the day-to-day execution of the work as well as the writing up of the Diary. In this we were ably assisted by Shri Zainuddin D. ANSARI, who besides being responsible for photography and surveying, was with Dr. DEO in charge of the accounts and the camp. My other junior pupils, (now) Dr. B. N. CHAPEKAR, Dr. A. P. KHATRI, Dr. M. S. MATE, Shri G. J. JOGLEKAR and Shri M. D. CHITALE while having their training, worked as trench Supervisors, and assisted in the daily registration of finds. All of them participated in the river survey which was undertaken on our weekly holiday. In this, Shri ANSARI, popularly called SHEIKH, contributed a major share by his keen and intelligent observation. After my wife—Sarala—discovered the stratified deposits of Series II, we always looked forward to Sunday, when everyone hoped to find more fossils.

Local Help

Our excavations as well as explorations work was made joyful by the keen interest taken by the local residents of Nevasa and Shri M. N. DESAI, the then Collector of Ahmadnagar. The latter lent some of his tents and got me for a few days, a jeep from the Maharashtra Sugar Factory at Belapur which helped me in surveying the Godavari-Pravara and their tributaries. The prominent residents of Nevasa Khurd, Shri B. U. KULKARNI, Pleader, Shri Bansibaba TAMBE, Dr. B. S. DEVACHAKKE, Mamalatdar Rao Sahib KHULGE and Sub-Judge Shri RANADE, the Headmaster of the local school Shri BHAPKAR, took an intelligent interest in the work and rendered us all possible help. So to all these friends my grateful thanks are due.

Expert Assistance

Special mention must be made of Dr. (Miss) ROSEN who had come to India after having had her training in England and joined the Deccan College as a Government of India Scholar. She helped us in exploring the delicately-made and preserved house-floor of the Sātavāhana house, as well as in cleaning the pots of the Chalcolithic period.

The Institute was also very fortunate in having the expert assistance of Prof. Dr. (Mrs.) Sophie EHRHARDT of Tübingen University. With skill and

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diligence she pieced together the human skulls and skeletal remains of the Chalcolithic period and gave us a report within six months. The original report was in German, and has been translated by Dr. D. D. KARVE, which work was initially begun by Dr. (Mrs.) Irawati KARVE, now Professor of Sociology and Anthropology, but not completed owing to other pre-occupations. We are extremely thankful to both these ladies and also to Dr. KARVE for their willing help, but for which this Report would have been incomplete.

Co-operation in other technical fields was sought and willingly offered by

Dr. MOTI CHANDRA, Director of Prince of Wales Museum, Bombay.

Mr. E. C. ALLARDICE and his colleagues of the Atomic Energy Commission, Trombay.

The Director of the Geological Survey of India, and particularly Shri C. TRIPATHI, a member of their staff, for expeditiously identifying the fossils from Nevasa and Kalegaon.

Dr. F. E. ZEUNER, Professor of Environmental Archaeology, University of London, for identifying the Kalegaon fossils from our drawings and photographs.

Dr. B. B. LAL, Archaeological Chemist, Dehra Dun.

Prof. K. V. KELKAR, Fergusson College, Poona.

Dr. J. C. GEORGE and Dr. B. SUBBARAO, Heads of Zoology and Archaeology Departments, the M.S. University of Baroda for getting the animal bones identified by Shri A. EAPEN, and helping in the survey of the mound with the assistance of their Senior Draftsman and Surveyor, Shri Ramesh KHATRI.

Dr. S. K. KULKARNI-JATKAR, Head of the Chemistry Department, University of Poona.

Prof. P. N. DRIVER, Principal, Agricultural College, Poona.

Dr. Vishnu MITTRE, of the Birbal Sahni Institute of Palaeobotany, Lucknow.

Miss Elizabeth RALPH of the Physics Laboratory, University of Pennsylvania, U.S.A.

Dr. H. C. RAY of the Zoological Survey of India.

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But for the help received from these scholars and their institutions, it would not have been possible to get our iron and copper objects and coins cleaned and spectrographically analysed, the animal bones, grains and rocks identified and above all, the cultural layers dated by C-14 method. To all these grateful thanks are offered by my colleagues and myself.

Our grateful acknowledgments are also due to the Director General of Archaeology in India for lending blocks of illustrations published in *Ancient India* and *Indian Archaeology—A Review*, for use in this Report; the authorities of the National Museum, New Delhi for lending a photograph of the model section of the Nevasa Excavation prepared at the Deccan College in 1956 and now exhibited there. It is here reproduced as *frontispiece*. To Dr. M. G. DIKSHIT, Dr. B. A. SALETORE and Shri ANNEGIRI for lending the photographs of rotary querns from Sirpur and Dharwar respectively.

We owe a special debt of gratitude to Prof. D. G. KARVE, Vice-Chancellor, University of Poona and Chairman, Council of Management, Deccan College, and the University Grants Commission for enabling us to publish the results of our work so fully and adequately. For bringing out the Report neatly and in record time of three months the credit entirely goes to Shri S. RAMU, Manager of the Commercial Printing Press and his staff.

II

Summary of Results

The excavations provided a much more wider vista of human achievement in the past in the Pravara valley than the limited objective set before us by the late Shri B. G. Kher.

Briefly we go back to the First Man in Maharashtra through six cultural periods (see Frontispiece) *ranging over 150,000 years. For the first time in Indian Archaeology, each of these periods is comparatively well dated. Periods I and II palaeontologically—that is with the help of animals which are extinct now. Periods III and IV by Carbon-14 tests, in addition to stratigraphical evidence and distinctive objects; Period V by coins and pottery and Period VI by distinctive objects as well as coins.* Our work showed that :

(i) The Lāḍmoḍ mound was being occupied during the 15th cent. A. D. or a little earlier by a people who lived in houses, having plinths of large

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semi-dressed stones and mud walls. *Inter alia* the inhabitants used coarse red and black pottery, the former with a small spout on the side, beautiful polychrome glass bangles and beads. The occurrence of a complete *śaṅkha* (Conch shell) and a group of six cymbals suggest that the residents were Hindus, though the rulers were Muslims (see Figs. *185*, 187). The objects might as well have been used in the earlier Hindu period *c.* 1300 A.D. when Shrī Jñāneśvara lived there, but there is no specific evidence to connect the objects with him or his period.

(ii) There was probably an earlier temple or a structure, just underneath the present temple (as shown by a trench cut at right angles to the west of the present temple, but not fully completed as objected to by the temple authorities).

(iii) This debris of the above mentioned houses covered the remains of earlier habitations of two main periods called here historical and proto-historical or Chalcolithic. The later phase of the historical—here designated Period V—was perhaps the most flourishing period in the history of the site. The houses were built on mud and rubble foundation. The walls were uniformly of bricks (*Fig. 33b*, *34a*), and the roofs covered with tiles which were fixed on to the rafters with iron nails. The size of the rooms excavated was probably 7 ft. × 9 ft. Each house or a group of houses had a soak-pit which served as a sanitary convenience (*Fig. 35*). This was alternatively made of wedge-shaped bricks or large terracotta rings. The residents ate wheat, *mung*, *bajri* or *nachni* and oil of *Karadi* seed—the *last three found for the first time in India*—and attest to the food habits of the people in Northern Maharashtra some 2000 years ago. It was at this time or slightly earlier that wheat and other grains began to be ground in rotary querns (Marathi *Jāte*) of which Nevasa provides the earliest specimens. (Figs. 199, *200*, 203). This mechanical contrivance, as well as some household utensils—like the turning shovel (Marathi—*Ulathna*), copper or bronze dish with an omphalos or projection in the centre (Figs. 187, 189), fine red polished pottery cups, dishes and sprinklers or small spouted *lotas* (Figs. 142-144), but definitely huge wine jars with handles on either side, called " amphora " were brought to Nevasa owing to Roman or Mediterranean contact. It was also possibly due to this relation that a nude mother goddess, as well as a much younger goddess seated in an European pose (Figs. 179-*183*) became popular in India and occurs throughout the Deccan and Northern India. Figures of these goddesses as well as beautiful small boyheads (Figs. 180, *183*) were made in a double mould of kaolin or ordinary clay—the chief centres being Ter and Kondapur in Osmanabad District. From every

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point of view, this was the most prosperous period in the cultural history of Nevasa.

In the earlier phase of this period—Period IV—the houses seem to have been made with mud, though their floors were made with lime and hemp, and large bricks were known. Fine pottery was of a black-and-red variety. But the more distinctive feature of this period—as far as Nevasa's contribution to our knowledge is concerned—is the occurrence of new types of coins of the Sātavāhanas (*Figs. 74, 75, 76*). More light on other cultural aspects of the period will be cast when the present horizontal excavations reach this stage.

Before Nevasa entered the so-called historical period about 2nd century B.C. it had been abandoned by man for a considerably long time. The evidence for this is visible in a thick black band indicating humus in the soil owing to vegetation which intervenes between the deposits of the historic and pre-historic periods (*Fig. 21*).

This prehistoric period began somewhere about 1500 B.C. and ended about 800-700 B.C. We can take 1000 B.C. as a central date of the habitation, as has been suggested by C-14 examination. At present there is no evidence to say how this habitation was destroyed. But it definitely seems to be a colonization by a people from the north who came with a knowledge of elementary copper metallurgy, and a highly specialized art of pottery. Unfortunately the skeletal remains of adults found until 1956 are very few, and insufficient to say anything positively about their racial type. If the three new adults found this season, and the more which will be discovered in future, also show predominantly primitive traits, then the view here propounded about their migration may have to be revised. At the time of their arrival, people further south and east were in a Neolithic stage of culture, its chief characteristic being tools—axes etc. of polished basaltic stone (*Fig. 70*). This, the newcomers, appear to have accepted and used copper sparingly, as it was rare. This specialized pottery is found all over the Northern and Southern Maharashtra and as far as at Navdatoli on the Narmada in Central India, and Mysore in the south. The people who used this excellent pottery—various sizes of carinated bowls and vessels with spouts and a high or flaring wide neck (Figs. *85A, 85B*)—lived in mud houses having wooden posts and floors made with lime and hay or alternatively with hydraulic lime mortar with a bedding of gravel. Not much is known about the size of the houses. One of the houses or huts was 9 ft. × 7 ft. However, there is no doubt that they buried the dead right under the house floors : the children in a single or double

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urn, adults in large jars, but sometimes right on the floor without any covering (*Fig. 20a*). This practice was again widespread, almost co-extensive with the distribution of the pottery. The dead were provided with pots used while living, and the children in addition with copper bead necklaces (*Fig. 185*). Strung with spun silk and cotton thread, the latter suggesting the use of cotton clothes as well. While the people in the adjoining villages of the Narmada knew a number of food grains, those from Nevasa seemed to have relied primarily on beef and pork, as is evident from the bones of pig and cow/ox and deer which are found in abundance. This picture of life in Maharashtra some 3000 years ago, is certainly incomplete. It is hoped to fill in more details by further excavations at Nevasa and elsewhere in the Deccan.

However, this was a civilized stage of life—a pastoral village with beginnings of agriculture—when compared to what Nevasa was in the earlier Stone Ages. Even here—Period II—between 25,000-15,000 years B.C. man was more advanced than the preceding. Though man was a nomad and a hunter, his stone tools indicate that he probably used the bow and arrow or spears tipped with stone points, and spokeshaves (Fig. 66). Again this was not the state of man only on the Pravara or the Godavari. Since the discovery at Nevasa, similar tools have been recognised elsewhere in India in an identical context. It is only at and around Nevasa and on the Narmada that the remains of animals whom man hunted are found along with his tools, thus helping us to know the environment and the probable time of his existence.

The man of Period I lived in a still remoter antiquity. He lived all along the Pravara and the Godavari from Vite and Akola in the west to Nevasa in the east and from Nasik to Paithan, at a time when the climate was much more wet than today and an elephant, a rhinoceros and an ox of a much different type than at present roamed the forest. Who this man racially was is not known. If similarity of tools has any significance, the First Man of Maharashtra should have affinity—racial or cultural—with his fellowmen elsewhere in India.

At Nevasa, thus, one witnesses the progress of man from a purely Food Gathering stage to Urbanization in about 100 A.D. through a pastoral-cum-peasant stage and a full-fledged village stage about 1000 B.C. and 100 B.C., respectively. After about 200 A.D. Nevasa was probably deserted until it was revived as a religious centre by 1100 A.D. Since then it has maintained this position through Muslim-Maratha times. It is now on the way to Second Urbanization.

Mahableshwar,
6th April 1960.

H. D. SANKALIA

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I

ANTIQUITY OF NEVASA

Nevāsā Town

Nevāsā (19°34′ North Latitude and 75° East Longitude)[1] (74°54′ to be exact)[2] is situated on the Pravarā, a major tributary of the Godāvari. The former rises between Kulang and Ratnagad; the latter at Trimbak, 12 miles north of Nāsik and both form the eastern slopes of the Sahyādris. The town of Nevāsā is located on both the banks of the river. That on the northern is called "Nevāsā budruk" (large), the southern being called "Nevāsā khurd". These, of course, represent the old status, which the divisions enjoyed in the Muslim period. Now the "khurd" division has indeed become big with Government offices, the post office and the weekly bazaar, offering heaps of cotton, wheat and *jawar* in the season. It is also the taluka head-quarters, being 35 miles north-east of Ahmadnagar.

Geological Setting

Geologically, both the rivers belong to a mature river-system, unlike some of the western flowing rivers of the Western Ghāts. Hence their courses are well graded, once they leave the hilly region. At Nevāsā the Godāvarī is only seven miles to its north, flowing almost parallel to the Pravarā, but meeting at Pravarā-Sangam, about seven miles to the west of Nevāsā. Thus from Akolā and Nāsik, both the rivers come down from one terrace or plateau after another formed by the Deccan Lavas. Though the streams are now entrenched in a comparatively narrow bed, exposing the older alluvia and at times the basal rock, there is no doubt, as shown by the extensive field surveys, that these rivers flowed in the Middle Pleistocene times in a very wide valley. There were at least two cycles of aggradation and erosion. During the former, the rivers deposited large coarser gravels and fine silt. The top of the latter at many places has weathered into a blackish soil, while elsewhere, for instance, at Kālegaon,[3] about 17 miles west of Nevāsā, on the Godāvarī, there are thick deposits of genuine *regur* (black cotton soil). The exact cause of this differentiation is not understandable, except it be that where the deposits are thick, there were deep troughs. Whatever it be, the entire middle reaches of these rivers are moderately fertile, cotton being one of the most important cash crops, wheat,

1. *Gazetteer of the Bombay Presidency*, Vol. XVIII, Ahmadnagar (1884) p. 729.
2. *Survey of India Map*, Sheet No. 47 1/14 (1 inch = 1 mile).
3. Spelt as 'Karegaon' in Sheet No. 47 M/2 (1 inch = 1 mile).

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jawār (a kind of millet), *kardi* (oil seed), coming next. An almost endless line of carts (and now trucks) transport cotton to ginning presses. It is possible that this scene is at least 2,000 years old, Nevāsā being one of the important suppliers of cotton and woven goods to the chief markets like Paiṭhaṇ, about 40 miles south-east of Nevāsā, which lies on the trans-continental highway from Broach to Masulipatam on the east coast (see Map, Fig. 206 a). This commercial importance and strategic position lead to its continuous occupation right from the Chalcolithic period, though its initial selection might have been due to its forming a good natural cliff overlooking the river (as many other sites during this period were, as shown by explorations during recent years).

Traditional Accounts

Traditional accounts regarding Nevāsā or the Godāvari-Pravarā valley are very few. A section called "*Mahālaya Māhātmya*" in the *Skanda Purāṇa*[4] tries to explain the name 'Nidhivāsa' as follows: Once the demon Tārakāsura attacked Kubera, the god of wealth, who in great fear ran to Viṣṇu for protection. Viṣṇu gave him this place. And thither, he (Kubera) went, with his *nidhi* (wealth). Hence the place came to be called 'Nidhivāsa'.[5]

According to another version[6] of the *Mahālaya Māhātmya* not only Kubera but all the gods who were driven out from heaven by Tārakāsura, on approaching Brahmā and Viṣṇu for help, were given an asylum at Nevāsā which is not mentioned by name, but its position is correctly described as "south of Vindhya (mountain) and on the southern bank of the Godā(varī), there is a holy place (*kṣetra*) on the Varā̄ (that is the river Pravarā), and to the east of the river there is a Vaiṣṇavī śaktī (goddess, known as Mohinrīājā)". It is further explained in the same work that since all gods, including Kubera, brought here what was valuable to each, the place was called "Nidhivāsa", and since the great gods lived here the name "Mahālaya" was given to it.

4. Cited by Y. R. GUPTE in a Marathi article entitled "Nevasi Yethil Prachina Avasesa" in *Bharat Itihas Samshodhaka Mandala Quarterly*, (*B.M.S.M.Q.*) Vol. XIX No. 1, pp. 1-7.
5. Though there are three or four places where the story of the Tarakasura is narrated in this Purana, a glance through the contents of the published work did not show any such story. (Shri Venkateshwara Press, Bombay, 1918).
6. Cited by Sri Krishna Sastri TALEKAR, "The Legendary Account of Old Newasa", *Ind. Ant.*, Vol. IV (1875), pp. 353-55.

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Pruning off the mythological aspect of the legend, it might only suggest the southward migration of the Aryans, though, according to some scholars, Kubera himself was originally a non-Aryan deity, but later adopted by the Aryans. With regard to the name, it is only a late attempt by Brahmins to explain the same.

Puranic Tribes

Of the tribes which according to the *Purāṇas*, the *Mahābhārata*, the *Rāmāyaṇa*, and the Buddhist Jātakas, those which could have possibly lived in the upper and middle Godāvarī valley are the Nāsikyas,[7] Aśmakas and Mūḷakas. While there is some confusion about the name of the first, and very little information about the other two, we have a clear reference in the inscription of Siri Puḷumāyi Vāsiṭhiputa[8] to Asika, Asaka and Mūḷaka. So even though, as pointed out by LAW, there was possibly another tribe of this same name in the northwest of India, or the latter had in course of time migrated to the south, there is no doubt that in the 1st-2nd century A.D. the country around Paiṭhaṇ was called 'Aśmaka'. And this may be due to the fact that a people of this name had lived there for some centuries past. Slightly southwards in the valley of the Bhīmā and Mūlā-Mūṭhā lived the Rāṣṭrikas, while the Bhojas might have occupied these as well as the region of Vidarbha.

Aryans or Non-Aryans?

Who were these tribes really? We do not know. But a guess may be hazarded. Either they were the original inhabitants of the region and therefore non-Aryan, or the immigrating Aryan or mixed-Aryan and non-Aryan people. A tradition, the exact source of which I am unable to ascertain so far, says that Agastya, the first Aryan to cross the Vindhyas and go south had established his headquarters at Akolā on the Pravarā. From here extended a chain of settlements on this river and the Godāvarī, separated from one another by a *yojana* (about 8 miles). Some of these settlements are known today as Sūryapurī (Jorwe),[9] Brahmapurī (Belāpūr), Mātāpurī (Māhūr) and Indrapurī (Indāpur) and Shrīpurī (Shirur). The names are

7. The various references to these have been given by LAW, B.C., *Tribes in Ancient India*, Poona, 1943, pp. 178, 181-85.
8. *Ep. Ind.*, Vol. VIII, p. 60.
9. This is also known as Jarasandhapuri, though epigraphically the place was called Jumyaravegrama in the 11th century.

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obviously Sanskritized. But since 1951 a large number of Chalcolithic sites, all going back to at least 1500-1000 B.C. are being found in the river valleys mentioned above, as well as in others like the Tāpī in the north and the Bhīmā-Krishnā in the south. So there is no doubt that centuries before the Andhras or Sātavāhanas, Central India, the Deccan and Karnatak were inhabited by various groups of peoples. The present evidence shows that these people had brought a slightly higher way of life—the use of copper, fine wheel-made pottery, and a stone blade industry—upon a still earlier groups of people who were predominantly in a Stone Age economy, though using a kind of hand-made pottery, and manufacturing partly or fully polished stone tools. Real agriculture they did not know, and domestication of animals was still in its infancy.

How does this cultural fusion demonstrated by archaeology imply a racial fusion? A writer[10] has recently suggested that Agastya—who is supposed to be born in a jar, and is said in the *Rigveda* to have nourished both colours (*ubhau varṇau puposa*), that is not two castes, as is generally believed but both Aryans and non-Aryans,—was of a mixed descent. "For he belongs to both, and his hymns show clearly the character of the compromise". However, this Agastiyan penetration of the south, if it contains any grain of truth and reflects the integration of two traditions, was certainly much earlier than "the megalithic tombs of the 'saints'," as the writer further suggests. It goes back at least to the Chalcolithic period, which Carbon-14 tests would date to 1000 B.C., if not much earlier.

Literary References

Leaving aside tradition and myths, the earliest literary references to Nevāsā are found in *Līḷācaritra* and some manuscripts of the *Jñāneśvarī*. The latter is more specific and gives a general picture of the region. So it is taken first. Śrī Jñāneśvara, according to persistent local tradition, dictated the commentary on the *Gītā* to one Saccidānanda Bābā resting against a pillar in a temple at the southern foot of the Lāḍmoḍ mound. This pillar bears, no doubt, an inscription in letters of the 12th-13th century, but has certainly nothing to do with the tradition. What it, and other remains—particularly the two pillars now embedded in the Dharmaśālā behind the temple—indicate is that there was a temple of the 12th-13th century at the place or in the vicinity.

10. Kosambi, D.D., "Urvasi and Pururavas" in *Indian Studies: Past and Present*, Vol. I, No. 1, p. 175.

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Jñāneśvara at Nevāsā

But whether this was the temple where Jñāneśvara lived cannot be said for certain. Whatever be the truth, he lived at this time (A.D. 1271-1296) and was a contemporary of the Yādava king Rāmacandra of Devagirī. Jñāneśvara declared in no uncertain terms that the region around Nevāsā was holy and sacred throughout the three worlds (*tribhuvana*).

This would imply that the place was known as a religious centre, much before the famous commentator. There is nothing at present to prove this. Hence the literary antiquity of the site begins with Śrī Jñānesvara himself.

In the colophon of one of the manuscripts of *Jñāneśvarī*,[11] it is mentioned in Adhyāya XVIII as follows:

|| *aiseṁ yugīṁ parikaḷīṁ | Āṇi mahārāṣṭramaṇḍalīṁ |*
| Srī Godāvarī javaḷiṁ | nivāsa sthāna ||

|| *tēṁ tribhuvanaikapavitra | anādi pañcakrośa kṣetra |*
| jetha jagācēṁ jīvanasūtra | Śrī mahālayā vase ||

|| *jetha Yaduvaṁśavilāsa | jo sakalakalānivāsa |*
| nyāyātēṁ posī kṣitiṣa | Śrī Rāmacandra ||

|| *Tetha maheśānvayasaṁbhutēṁ | Śrī nivṛittināthasutēṁ |*
| keleṁ jñānadevēṁ gīte | deśikāralenēm ||

It may be that this manuscript was modernised or tampered with when the *māhātmya* of the place came to be written. For the colophon in the manuscript of Śaka 1272 of which Dr. M. G. PANSE[12] has prepared an index verborum, in which besides some slight verbal changes, the important and the crucial words "*nivāsa sthāna*" occurring at the end of line 2 are not there. Instead we have the word "*dakṣiṇiliṁ*" (śloka 817). The latter does, indeed, specify the place. It would thus seem that there is no unanimity about the exact reference to Nevāsā, and its environs in the various manu-

11. TALEKAR, *op. cit.*, p. 354.

12. PANSE, Murlidhar Gajanan, *Linguistic Peculiarities of Jnanesvari*, Poona 1953, pp. 14, 407 and pp. 303, 491. I am thankful to Dr. PANSE for comparing the manuscript with this passage.

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scripts of the *Jñānadevī*, though it is certain that Śrī Jñāneśvara had visited it and spent considerable time there in composing the commentary on the *Gītā*.

Līlācaritra

But a still earlier reference to the place is in the *Līḷācaritra*. This is an account of the peregrinations or *yātrā* of Śrī Cakradhara (A.D. 1194-1276), the founder of the Mahānubhāva sect, written by one of his closest disciples, Mhaïmbhaṭa or Mahīmdrabhaṭṭa Vyāsa or simply Mahibhaṭṭa soon after his Master's death, in *c.* 1275 A.D. (Śaka 1200). It is mentioned therein[13] that one day the Gosāvī, that is Cakradhara, went from Ḍobegrāma to Nevāsā or went to live there (*bīje kele*), and while returning from Nevāsā lived at Ghogaragāṁva. (See Fig. 2)

The original describes the visit as follows: "While proceeding from Ḍomegrāma to Nidhivāsa, there was Cācaramudī on the way". Further one Bhaṭobā told the Gosāvī (Cakradhara) that he was afraid of going to Nīvāse. It is however clear that Cakradhara visited Nevāsā towards the close of his life. In fact, if the account in a manuscript called *Caritra-ābāba* composed in Śaka 1682 (A.D. 1760) is correct, the founder of the Mahānubhāva sect had passed the sixth "Dīvālī" at Nīdhivāsī, that is Nevāsā. Now, if he celebrated the first at Hivarlī (modern Jālnā) in Śaka 1190, as calculated by NENE,[15] the one at Nevāsā would be in Śaka 1195. This day, according to the *Indian Ephemeris*[16] would be Thursday, 12th October 1273 A.D.

Nevāsā is again mentioned as Nidhivāsa in *Ratnamālāstotra* of Keśirāya Vyāsa,[17] which describes the pilgrimage of Cakradhara from Rājaṭakkalī and Ghogaragrāma to Nevāsā.

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13. This is as recorded in the *Sthāna-Pothi*, a collection of the places visited by Cakradhara and mentioned in the *Lilacaritra*, first systematically arranged by Baidevabasa. The work is edited by Vishnu Bhikaji KOLTE (Arun Prakashan, Malkapur, Berar).
14. The second or the *uttarardha* of *Lilacaritra* is not yet published, but NENE, H.N., in an article in Marathi, "Teravya Satakamtile Nevase", in *BISMQ*, Vol. XIX, No. 2, p.53, cited some extracts from it.
15. Cited in the Introduction, p. 5 to *Lilacaritra* by Hari Narayan NENE, Nagpur, Saka 1859, i.e. A.D. 1937.
16. Swamikannu PILLAI, L.D., *An Indian Ephemeris*, Vol. IV, p.149.
17. Cited by H. N. NENE in a Marathi article entitled "Teravya Satakamtila Nevasi", in *BISMQ*, Vol. XIX, No. 2, p. 53.

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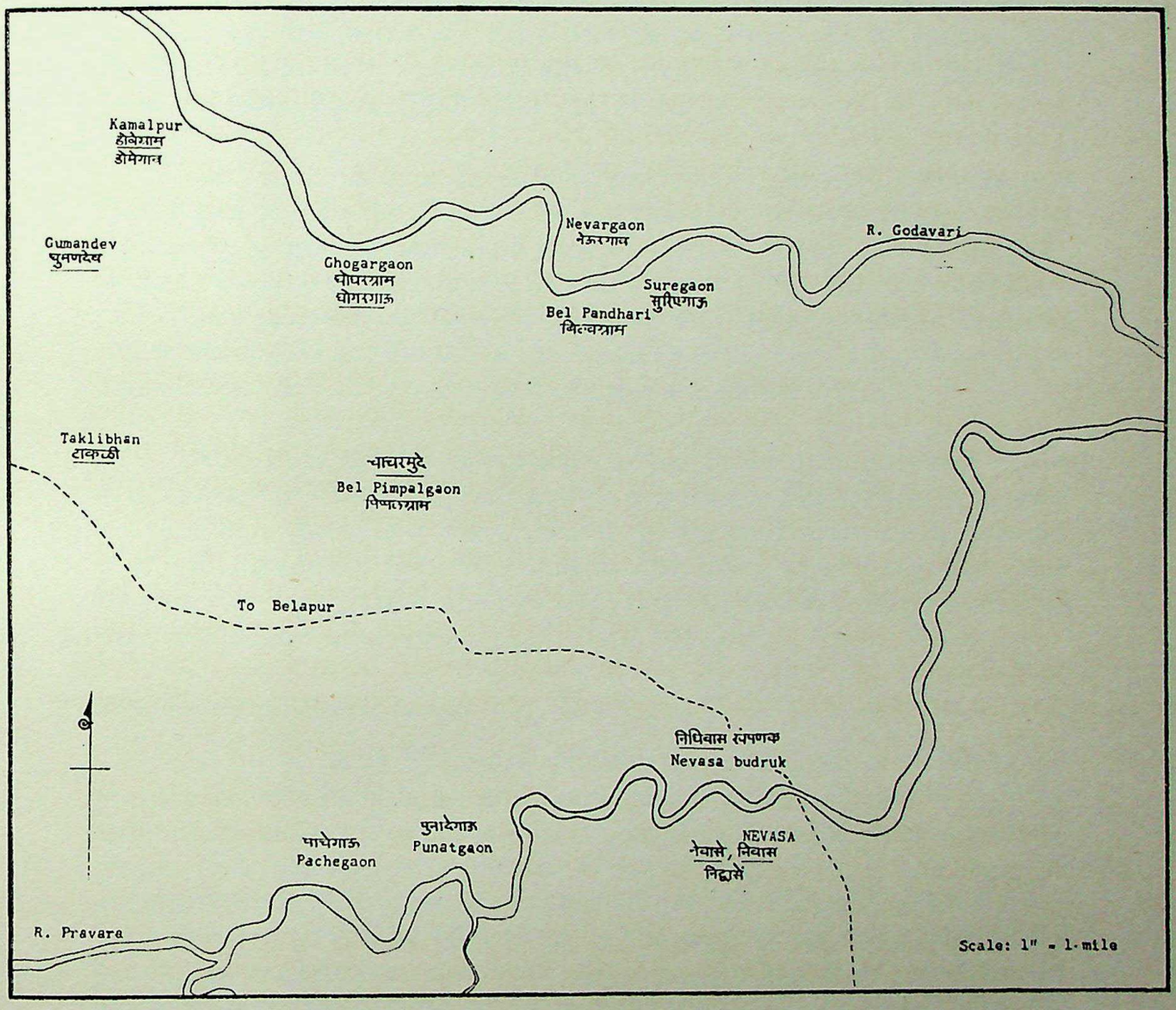

Fig. 2 : Map showing Nevasa and its environs in the 13th century A.D. (See p.6)

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Inscriptions

Inscriptional reference to Nevāsā is also so far only one. This is in a record [18] of Yādava Rāmacandra from Neurgaon, Śaka 1200 (A.D. 1278), about 7 miles north of Nevāsā on the Godāvarī. The inscription is available in fragments and hence not fully deciphered. From this it appears that Nevāsā then, as now, formed a sub-division (*khampaṇaka*) of the Seüṇa Deśa, its name being "Nidhivāsa" or Nidvāsa".

This is the first or the second instance of the administrative unit "Khampaṇaka" in the Deccan. In Karṇāṭaka it was considered smaller than a *viṣaya* and possible equivalent of a *bhukti*, as Dr. (Mrs.) MULAY's studies [19] show. It was introduced for the first time in the time of the Cālukyas of Kalyāni, as early as Śaka 977. The Seüṇa-Deśa included, according to her studies, Sinnar Taluka of the Nasik District, the northern part of the Ahmadnagar and the western part of the Aurangabad Districts.

From these few but important contemporary references little doubt is left about the name of the site and its sacredness. Jñāneśvara considered the area holy, because it was traversed by his predecessor or the founder of the Mahānubhāva sect, Cakradhara. The latter might have come here because very near Nevāsā, the two large rivers of the District meet, and all such confluences are held holy.

Significance of various names

As to the name Nidhivāsa, Nidvāsa or Nivāsa, all of which would give the modern Nevāsā, an explanation might be hazarded. The artificial mounds might have yielded, as they do now to the seeker or even a casual visitor, some object, even a precious object of gold. Hence it was regarded as "the abode or repository of wealth (Nidhivāsa)". Secondly, some straggling habitation must have been there, or the mounds indicated 'habitation' (*vasati*), as we interpret now—and this is exactly the word used by the villagers now in the District, when the habitation has been moved from one place to another—and so the place was known as 'Nivāsa'.

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18. Edited by Dr. DIKSHIT, M. G., in *Selected Inscriptions from Maharashtra* in Marathi, Bharat Itihas Samshodhaka Swiya Granthamala, No. 67, Poona, 1947, pp. 89-102, and 113-14.

19. From the Ph. D. thesis, 1954, of the Poona University by Mrs. Sumati MULAY on "*Studies in Historical and Cultural Geography and Ethnography of the Deccan*", and Appendix, p.40.

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Whatever it be, the mounds at Nevāsā were left alone and re-occupied only during the Early Muslim period—here called Bahmani—but immediately adjoining area to the east and south, and across the river on the north, was already inhabited during the Yādava period, as numerous remains of temples and other buildings show. The habitation has continued through the Muslim and Maratha times until to-day. The most important buildings constructed during this period are chronologically the Idgāh, Kāmilsāh's dargāh, Jāmi masjid, the temple of Mohinīrāj by one Candracūḍa and other smaller ones of Hanumān, Ganeśa, and the *ghāt* on the river,[20] while a new large temple has been constructed near the foot of the Lāḍmoḍ mound.[21]

Nevāsā in truth has been a 'Nivāsa'—'habitation of man'—right from Early Stone Age. With the progress of man it came to occupy such a strategic commercial position in the Pravarā valley that it might have become one of the inland markets during the Sātavāhana period, and constituted one of the 30 walled towns mentioned by PLINY though at present no traces of any fortification exist, and it is doubtful if any wall was there originally.

The site was probably deserted during the Cālukya-Rāṣṭrakūṭā rule, as we have no specific object of this period from the mound, nor any reference to Nevāsā and its environs in the inscriptions of the period. This, however, seems to be accidental. For soon after Nevāsā became the headquarters of a sub-division, and not only it but several villages within a radius of 10 miles occur frequently in the *Līḷācaritra* and the inscriptions of the region, indicating in no uncertain terms that they are handing down to us a still older history and tradition of which we have, so far, no record.

Jñānesvara made the place immortal. Revived, it acquired an important place in the history, culture and commerce of the locality and maintained it, in spite of the fact that it is at some distance from the railhead. But once again the Jñāneśvara temple and Nevāsā's commerciāl products—like cotton—make it a bee-hive of activity.

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20. For a detailed list of antiquities see SANKALIA, H.D., and MATE, M.S., *Antiquities of Nevasa* (State Board of Historical Records and Ancient Monuments, Monograph Series No. 1, Bombay 1960).

21. For details vide Ch. II. p. 13.

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CONTOUR PLAN

OF THE

LAD MOD MOUND NEVASA

SCALE

40 20 0 40 200

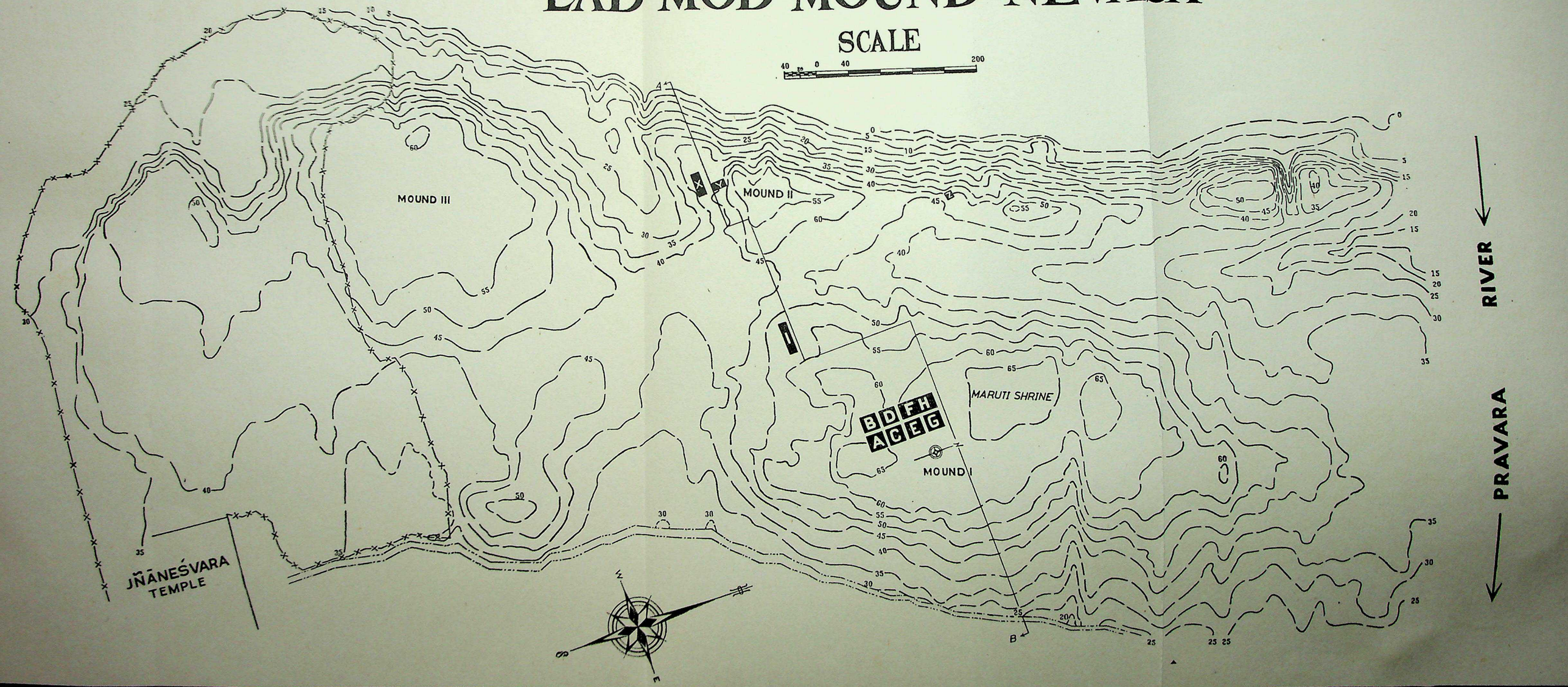

Fig. 3: Contour map of the excavated and allied mounds.

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II

STRATA, STRUCTURES AND BURIALS

About half a mile to the west of Nevasa khurd and immediately adjoining the Jñāneśvara temple (now completely renovated) are a series of three mounds cut up by several gullies. Their northern edge overlooks the Pravara. On the opposite bank lies Nevasa budruk.

The Site

The ancient site was situated on both the banks of the river. But that on the northern or right bank is at present inhabited, and was also partly occupied during the Maratha period, as there is a well-built 'wāḍā'.

The mound (Md. I) on the southern bank is traditionally called 'Lādmoḍ' and is regarded as a '*bet*' or an island, the general impression being that the river once flowed round it. If this is indeed so, the present channel cutting through cliff-like banks must be comparatively very recent. This is a geological problem, and we had no means to check the belief. Small digs near the temple showed traces of fine sand at the depth of nearly 15 feet, suggesting that once the river or its arm might have flowed thither.

Ladmod: Name

The name 'Ladmod' is believed to be acquired by the fact that the Lātas (that is, people or rulers of southern Gujarat) destroyed (*moḍ*) the habitations in the past. And this could have happened several times during the Early Historical Period (*c.* 300 B.C. to 1300 A.D.) when the paramount rulers or their vassals fought against each other. Probably the legend might have in view the fight between the rulers of Broach under Vastupāla and Tejapāla and the armies of Yādava Siṅghaṇa, (after which Lāṭa ceased to be called Lāṭa). But we have no evidence so far that the armies of Lāṭa had advanced upto Nevasa. The name 'Ladmod' may therefore be understood as expressing the general widespread destruction which the appearance of the site suggested to the late inhabitants of Nevasa.

Extent and Limits

The Ladmod Mound measures approximately 880 ft. N-S and 380 ft. E-W. Its western and southern slopes are very much distorted by earth-grabbers, whereas the northern edge is virtually a cliff overhanging the river.

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Besides, the military has disturbed its western part by effecting it into a shooting ground. As it is, it is bounded on the east by a small path which skirts its entire length and leads to the river. On the south is a road leading to Nevasa town; and the extensive modern temple has eaten up much of the area of the mound. The western limit is demarcated by a nala which might have been intentionally made to serve as a moat.

Mounds I--III

All these activities have cut up the Ladmod Mound into smaller ones. For our convenience, that part of Ladmod which bears the Maruti Temple has been designated as Md. I; that which flanks the western side as Md. II, and the camping area as Md. III. (Figs. 3, *4a* and *4b*).

The Trenches

Of the three mounds, Md. I is the highest and rises about seventy feet over the level of the Pravara. Therefore, it was selected to obtain a cultural sequence in 1954-55. During the subsequent season, digging was extended to Md. II to ascertain whether the western side now pierced by a nala represented old fortifications. The area between Md. I and Md. II was also tapped to locate the gateways, if any.

On the highest and the most even top surface of Md. I were laid eight trenches, each 20 ft. × 20 ft. and separated by a baulk of 5 ft. in between. The trenches were named A to H, of which the first four serially were dug in 1954-55 and the next four (E to H) in the subsequent year.

On the western slopes of Md. II was laid Tr. I, 40 ft. × 10 ft. in dimensions to ascertain, as explained above, the existence of gateways. Trenches X and Y measuring 30 ft. × 10 ft. and 10 ft. × 15 ft. respectively were laid on the westernmost Md. II for reasons cited above.

Trench Z (10 ft. × 10 ft.), to the north of Tr. Y, was laid at a later stage when a skeleton was accidentally exposed by one of the workers. (Fig. 5)

Stratification

Trenches A to H lying on the highest area of Md I had to be dug to a maximum depth of 30 feet, but elsewhere the top layers were removed by earth-grabbers and hence the virgin soil was reached at 15 feet. from the existing surface.

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(*a*)

(*b*)

Fig. 4: (*a*) *View of Ladmod Mound I from south-west.*
(*b*) *View of Mound III from east.*
} *See p. 14*

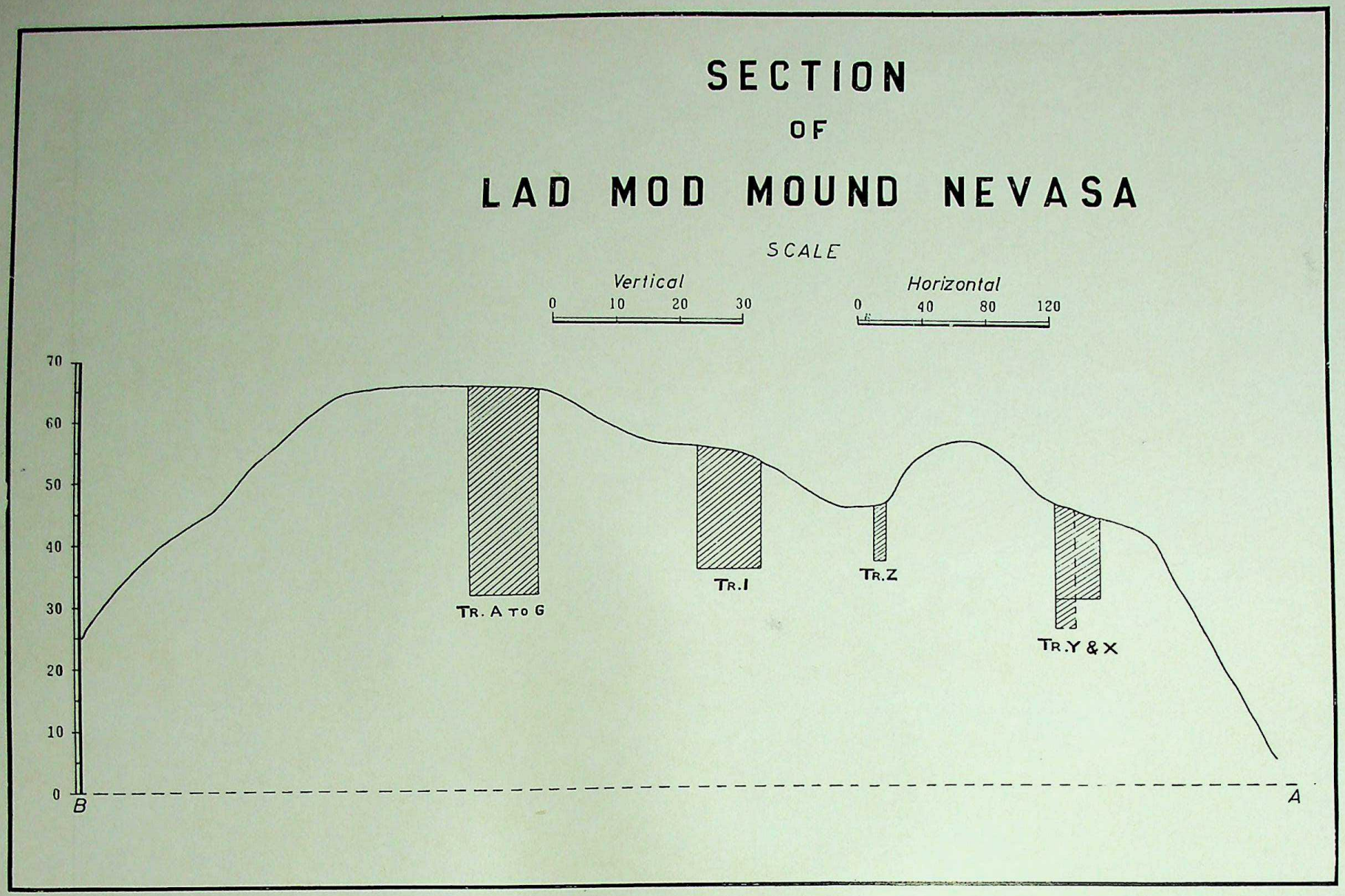

Fig. 5: Section of Ladmod showing different trenches (See p.14)

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STRATA, STRUCTURES AND BURIALS

The nature of stratification was determined to a greater extent by the material used for structures. For instance, the layers of Period III or Chalcolithic were devoid of any structural remains and consisted primarily of dark brown earth, except the white streaks of lime floors. The appearance of the layers of Period IV was whitish brown due to the quick succession of habitations characterised by floorings of lime. The deposits of the succeeding period were markedly red on account of extensive use of bricks in structures and the floorings of hydraulic lime mortar. The deposits of Period VI were loose, ashy brown and gritty due to the presence of huge pits and remains of stone foundations. The loose brown deposits were formed due to the collapsed mud walls of the houses of this period. Houses with stone foundations and mud walls even now continue to be built in the Deccan.

The Weathered Layer

The top of the deposits of Period III was found to have been weathered due possibly to the abandonment of the site after about 1000 B.C. This weathered deposit consisted of blackish soil of a thickness varying between 10 to 18 inches. In the first season's work, it could not be traced properly. However, during 1955-56, it was clearly demarcated in all the trenches. (see Figs. 11 and *21*). This layer, therefore, indicates the long gap of time that existed between the occupations of Period III and that of Period IV.

The Periods

The various trenches showed a sequence of succession of four main periods, designated here as Periods III—VI.

The periods from IV onwards furnished extensive evidence of structures. Actually the structures defined the strata. Fortunately in the main eight trenches on Md. I we were right in the houses. So, save minor differences, it was possible to uncover the remains of houses of each period by removing the fallen debris. It is, therefore, possible to give a connected account of these trenches, pointing out the differences, wherever they existed.

Habitations of Period III

The first inhabitants of Ladmod settled right on the black soil. There were a number of successive habitations after that, each of which could be demarcated with the clusters of burials associated with each habitational

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level. The practice of these people was to bury their dead below the occupational floor. This, therefore, helped in marking the different habitations. It may, however, be noted that in spite of these different habitations the remains of which ultimately resulted in the formation of a 6 to 9 feet. of deposit, the cultural features remained the same as evidenced by pottery, tools and weapons of stone and copper and the mode of burial.

As such, instead of dealing with each and every habitational phase during this period, it is proposed to summarise the main features of these Chalcolithic habitations.

On the basis of the burials and floor-remains, it is possible to say that at least five habitational phases took place during Period III. The earliest was evidenced by burials (Nos. 22, 23) right into the black soil as noted in Trs. F and Z at a depth of 29 and 14 feet, respectively. The last was attested by a group of four burials in Tr. A and a cluster of nearly sixteen in Tr. F (Fig. 7, *8 a*), immediately below the lime floor of the historical period which was found to seal the weathered deposits of Period III.

The first four habitations seem to have been sparse. The last or the top most of this period was fairly extensive as burials were associated with it over an area measuring 80 ft. × 20 ft., i.e. co-extensive with the main trenches on Md. I.

Phase I

The habitations of this period, as said above, lived right on the black soil. This was evidenced by a group of two burials, the urns of which were kept in a depression dug into the black soil.

No floor of any kind was associated with these burials. It is likely, therefore, that the first inhabitants did not bother themselves with the making of any elaborate floor surface.

The only contemporaneous exception to this was from Tr. Z where a lime platform was noticed immediately over the black soil on which the skeleton was laid (see *Fig. 20 a*). The platform was exposed over an area 10 ft. × 10 ft. The limited extent of the dig, however, failed to give the clue to the problem whether the thin lime platform formed part of a habitational level or was a part of the burial procedure.

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Phase II

The next phase of habitation of Period III was evidenced by remains of a patchy floor level in Sq. B at a depth of 29 ft. 9 ins. The area covered measured 20 ft. × 20 ft. However, patches of similar flooring of hydraulic lime mortar in the adjoining trenches at the same level indicated that the floor was much more extensive—at least 40 ft. × 20 ft.

The floor was made of black clay and lime baked together and lumps of these pressed down. No evidence of any post-holes could be had. It may be that this part probably represented the outer part of a habitation.

Phase III

The third phase of habitation was exposed at a depth of 22 ft. 8 ins. in Sqs. F and H.

This phase was characterised by a group of seven urn-burials in Tr. F, one adult burial in Tr. H and an empty urn burial in Tr. G.

The extent of these burials shows that the habitation extended at least over an area measuring 45 ft. × 20 ft. on Md I. The floor consisted of rammed brown clay about two inches thick. No evidence of any posts or post-holes could be had. The burials were laid right below the floor.

Phase IV

The next phase of habitation was exposed at a depth of 21 ft. 2 ins. and was represented by a group of seven urn-burials in Tr. F and one each in Trs. I and X.

All these urns were laid below a flooring made of lime and clay which gave it a whitish brown appearance. The extent of this floor could be detected in patches in the adjoining Trs. H and G which indicated that it occupied an area at least 45 ft. × 20 ft. on the main mound. The evidence of contemporary floor in Tr. I which was to west of these trenches and in Tr. X testified to a fairly wide extent, possibly indicative of several separate houses, of this phase.

Whereas the flooring in Trs. F, H and G consisted of a rammed mixture of lime and clay of a thickness of about one and a half inches, that in Tr. I was nearly seven inches thick indicating the possibility of the

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floor being raised frequently. That in Tr. X was extremely patchy and resembled that in Trs. F and H.

The making of the floor did not involve the laying out of any hard foundation. On the available plain surface lime and clay was spread and possibly rammed.

At least six post-holes, all round in shape, (Tr. F) varying between four and two inches in diameter, and the remains of a round wooden post evidenced the use of wooden posts which supported the roof above. These post-holes and the post found nearby the group of burials in the same trench indicated that that area formed a part of the house. The random plan of these post-holes very close to each other was detected suggesting the erection of another support to the earlier pole. The depth of these post-holes which was never more than five inches might indicate that the roof they supported was not heavy but might have been made of a lighter material such as hay and bamboo strips.

The limited nature of the evidence was not sufficient to bring out the plan of the hut or to indicate the nature of the roof which covered these habitations. However, the absence of any evidence of walls either of clay or of brick suggests that these were a sort of open hutments built of not a very durable material.

Phase V

The last and the topmost habitation of Period III was evidenced by a patchy floor and burials in Tr. A which lay right below the lime floor of Period IV sealing the weathered horizon. (Fig. 6)

The patches of rammed dark brown clay and hydraulic lime mortar in the same trench testified to the existence of a habitational floor-level. However, its extent was limited to Tr. A measuring 20 ft. × 20 ft. and no evidence of its further extension was detected, save that in Tr.G to the north at the same level.

The nature of these two floors, though contemporary, was different. Unlike that in Tr. A, that in Tr. G consisted of a patch of a flooring made up of lime, clay and gravel. The patch was very small—measuring 1 ft. 6 in. × 11 in. with a small round post-hole, 2 in. in diameter.

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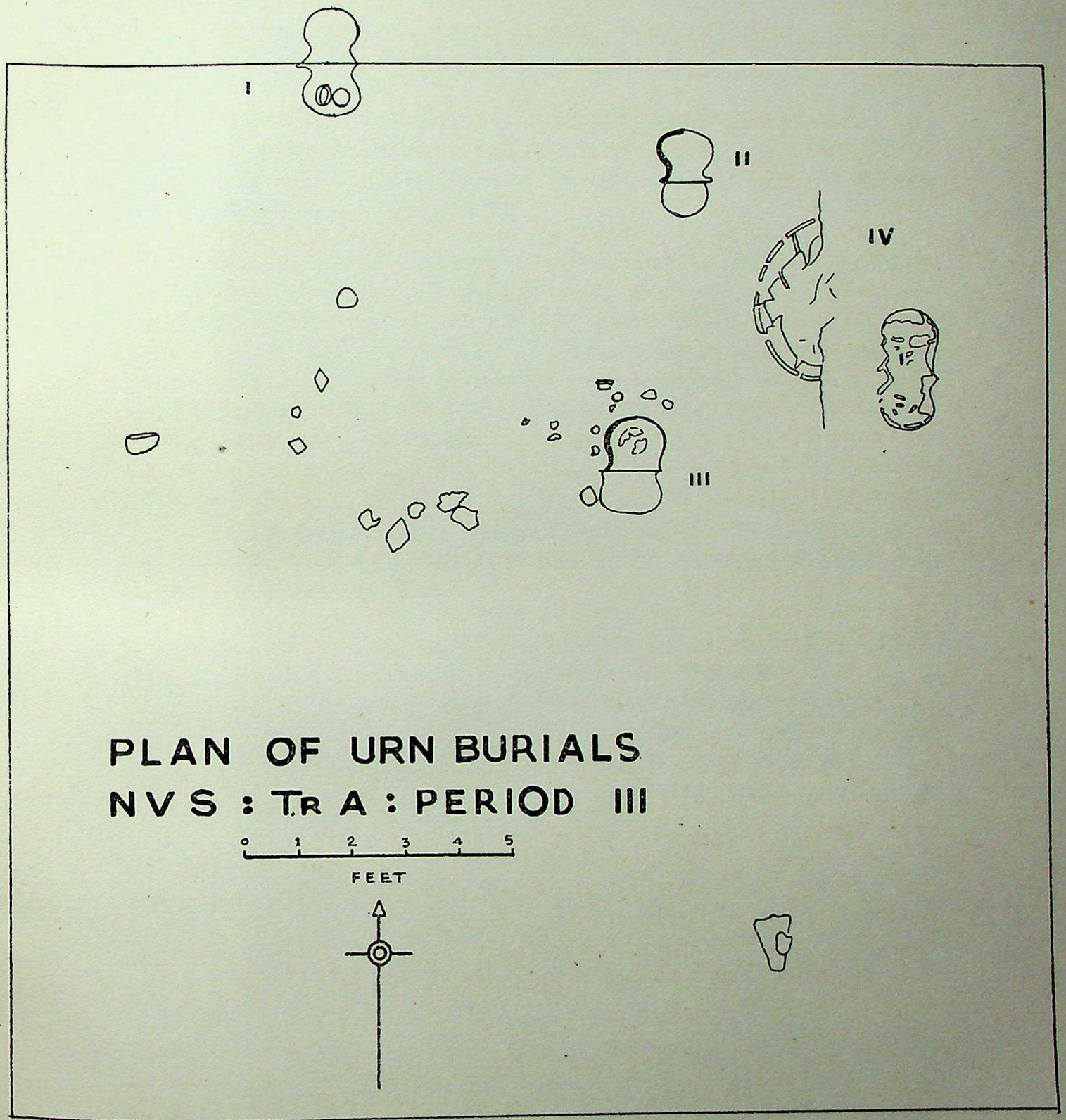

Fig. 6 : Plan of Urn-burials, Tr. A, Period III, NVS. (1954-55). See p. 20.

PLAN OF URN-BURIALS, PERIOD III, NEVASA

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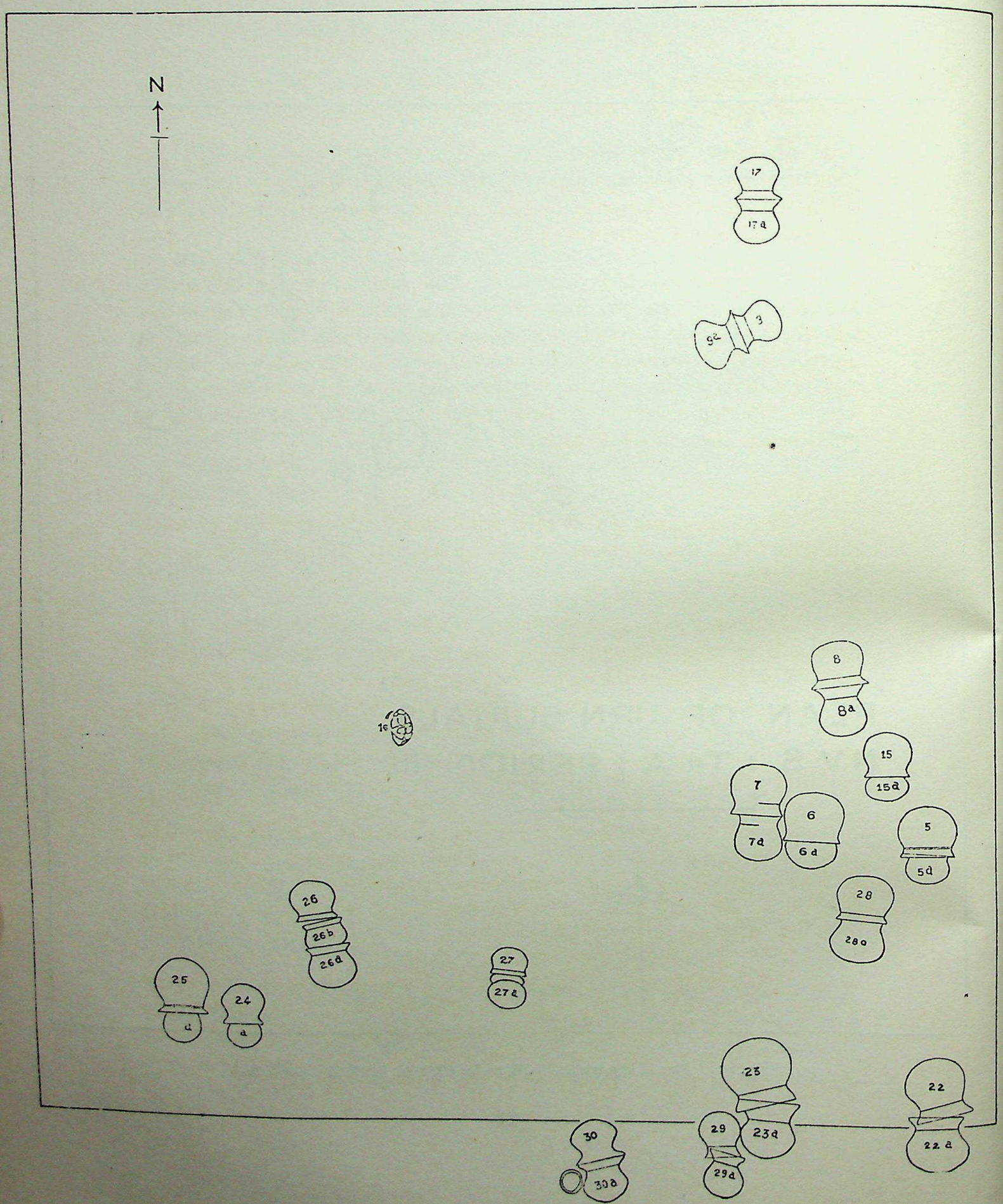

Fig. 7 : Plan of Urn-burials, Tr. H, Period III, NVS. (1955-56). See pp. 23-24

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Further digging towards the east outside the limits of Tr. G would have helped in knowing the extent and nature of this flooring.

However, the existence of a floor of hydraulic lime mortar and another of lime, gravel and clay (*Fig. 20 b*) at a distance of nearly 45 feet might indicate two separate houses, though contemporary, having two different techniques of floor-making.

The habitations of Period III, therefore, seem to have passed through five phases of occupation, all materially and culturally alike. The houses had floors of either hydraulic lime mortar, lime and clay, or lime, clay and gravel. The floors were not thick and did not involve the elaborate preparation of a level or foundation. Wooden posts were sunk into these floors which supported a light roof above. Large-scale excavations might help in knowing the plans of the houses.

The Burials

The inhabitants buried their dead—almost all children—right below the floor. This was evidenced by thirty-four burials exposed during two seasons of work at Nevasa.

Two urns of grey fabric with rounded bottom and flared mouth, kept face to face horizontally north-south, were utilised in the case of child-burials. Except in the case of two such burials (Nos. 22, 23) of Phase I, for which shallow pits were dug into the black soil below, in none others pits for laying the urns were found to have been made. The practice seems to be to keep such a pair of urns on the ground and to cover them up with earth (Fgs. 23, 29).

It may also be noted that urns were not used in all the cases. For instance, in Burial Nos. 19 and 10, two huge storage jars served the purpose of enveloping the dead which were grown up children (*Fig. 14 b*). In Burial No. 14, no covering of any sort was found and the dead was laid right on a lime platform. (*Fig. 20 a*).

In most of the cases, a pair of urns or storage-jars was used. However, in some burials, three (No. 26) or even one (Nos. 4, 16) urn was found to have been used. The urns, normally covered the dead but in some burials (Nos. 2, 28) even a normal pot of Jorwe fabric was used to cover that part which remained uncovered even when urns were used (Fig. 17).

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In almost all the cases, the urns or the storage jars were laid face to face so as to cover the dead completely. However, in one case (No. 27) there appeared to be a gap between the pair of urns.

The practice of urn-burials was associated with all the phases of Period III, and in most of these skeletal remains were found. However, in Burial No. 16, nothing but earth was found. It is likely that it was merely a symbolic burial.

Normally, remains of one person or child were associated with one burial. The only exception to this general practice, was Burial No. 6 which contained remains of more than one child and thus represents a multiple burial. (*Fig. 14 a*).

The dead was normally kept in a fully extended position with the head towards the north and legs to the south. However, a little deflection NE-SW was found in the case of the orientation of Burial No. 9. Besides this deflection which might be accidental, the fully extended position of the dead lying fully on the back was exceptioned by Burial No. 14 in which case the dead lay in a flexed position.

The concentration of such urn-burials was detected in an area 20 ft. × 15 ft. in Tr. F, whereas in the rest of the trenches no such cluster was found. Groups of seven child burials along with two adult burials in the same level belonged to Phase II of this period. (Figs. 7, *8 a*).

The urns, as pointed out elsewhere, are allied in fabric to the grey ware from Brahmagiri. However, at the latter site, such burials seem to be vertically laid and not horizontally as at Nevasa. The association of polished stone tools with such burial (No. IV) is significant. (*Fig. 8, b* and *c*).

The funerary goods associated with various child burials comprised small painted bowls, (No. I, Fig. 12), small globular vessels (No. 1), high-necked pots (No. 20) and tiny beads of faience (No. 7) and carnelian. (Figs. 13, 15, 16, 18 and 19).

As mentioned above most of the skeletal remains were of small children. According to Dr. Sophie ERHARDT all except three belong to this group. Burial Nos. 14 and 19 were children of six and ten years respectively, while Burial No. 10 was of a woman of approximately twenty years.

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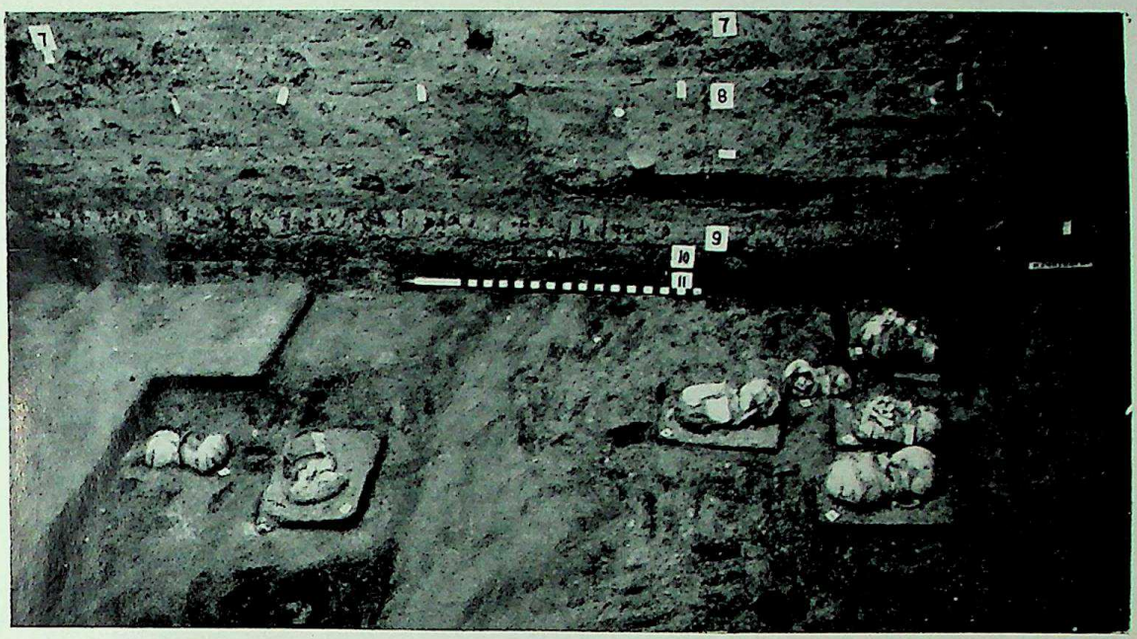

(*a*)

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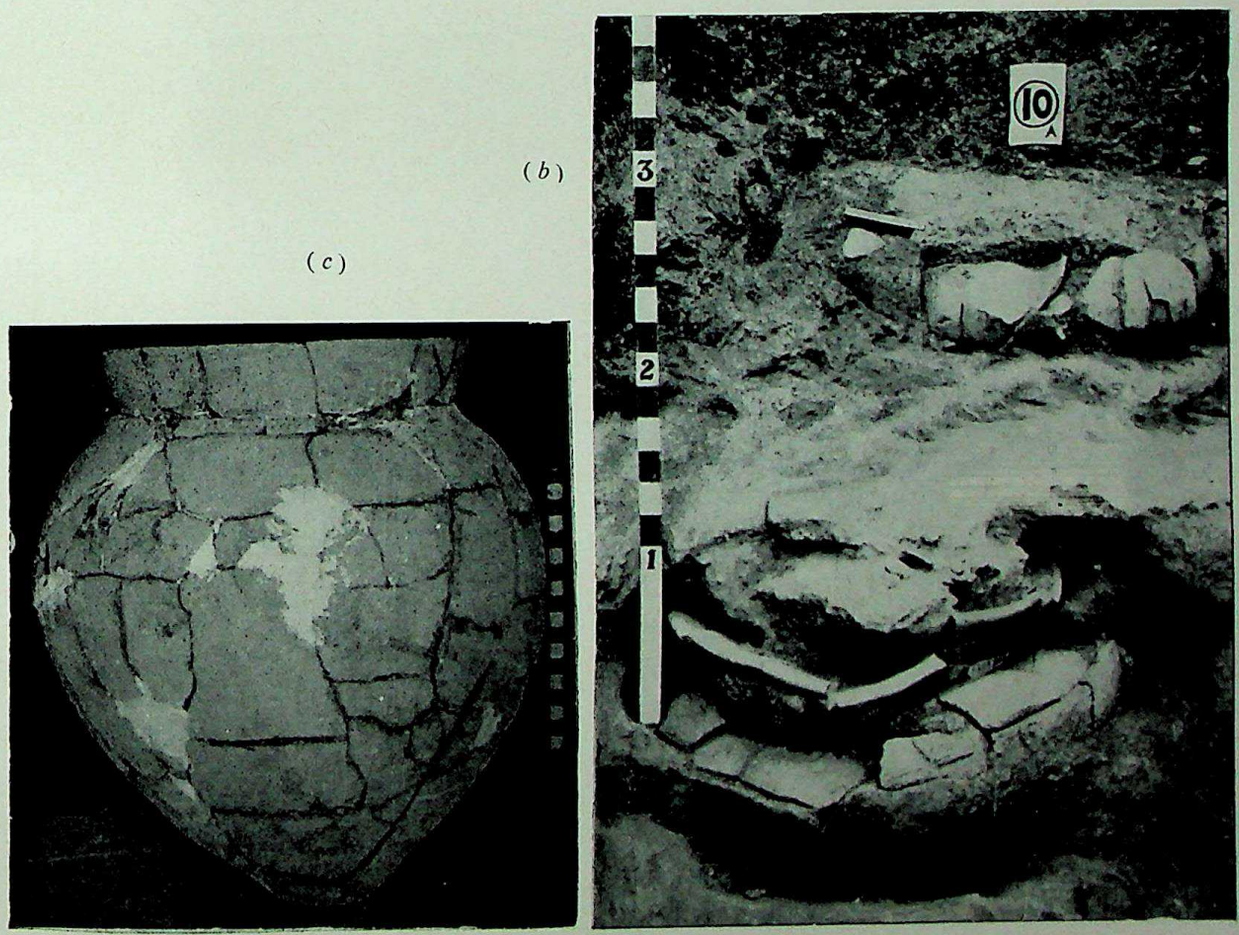

Fig. 8: (*a*) *Group of Urn-burials, sealed by layer 11, Tr. H, Period III, NVS.* (*1955-56*). *See pp. 18, 24.*
(*b*) *Close-up of burial No. 4, Tr. A, Period III, NVS.* (*1954-55*). } *See p. 24.*
(*c*) *Close-up of the storage jar* (*reconstructed*) *in* (*b*).

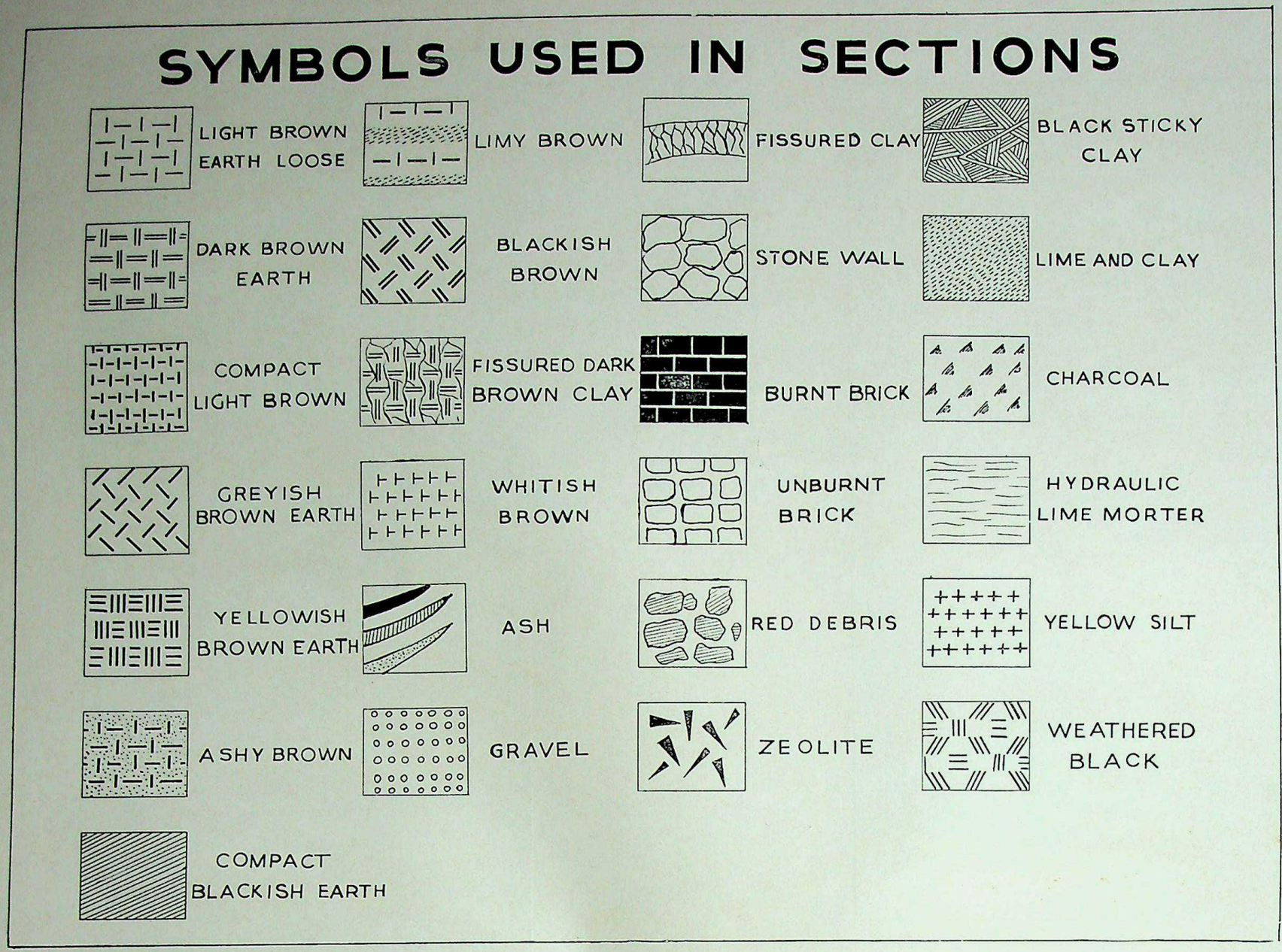

Fig. 9: Chart of symbols used in sections.

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NVS

SECTION FACING SOUTH, TRENCH A

1954 – 1955

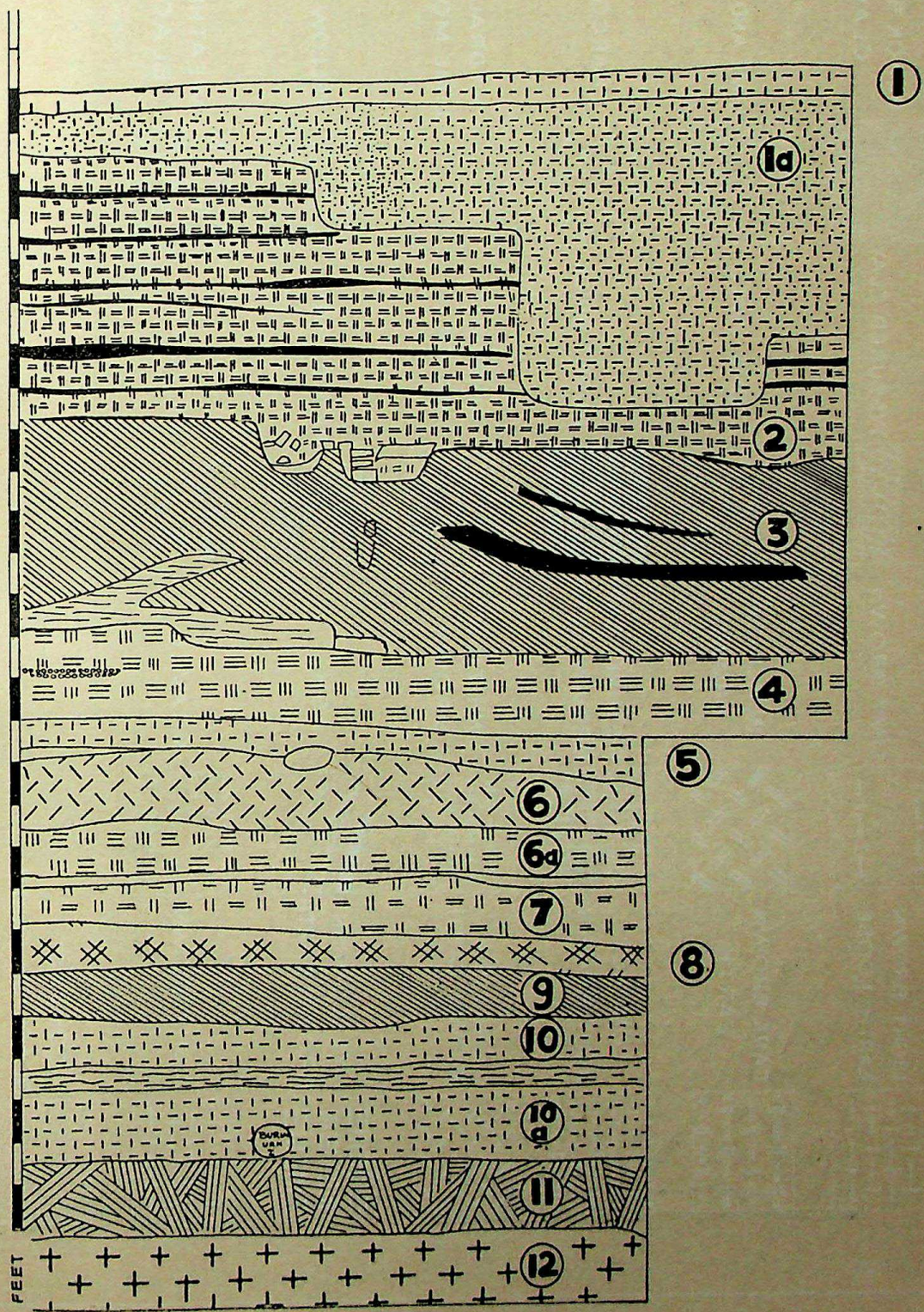

Fig. 10: Section facing south, Tr. A, NVS. (1954-55). See p. 23

NVS

SECTION FACING WEST, TRENCH H AND F.

1955 — 1956

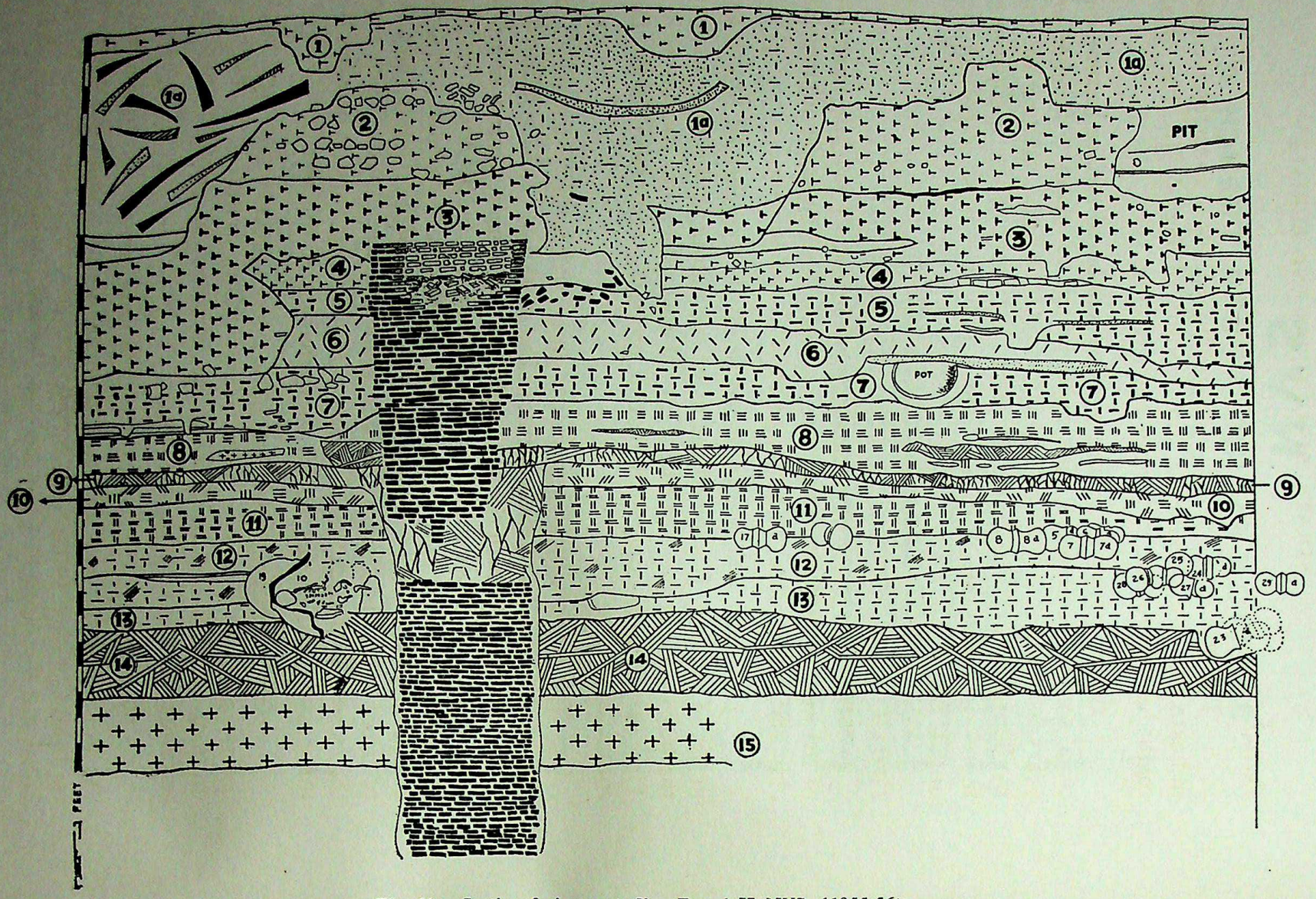

Fig. 11: Section facing west, Trs. F and H, NVS. (1955-56).
Layer 10 represents the weathered deposit. See pp. 17, 29, 41

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Period IV

The site of Ladmod was abandoned for a considerable period as indicated by the weathered top deposits of Period III. The weathering might have been due to various reasons. (Fig. 11).

Early in second century B.C. the weathered surface became the scene of a second occupation. During a period of about a hundred-and-fifty years, as many as six phases of occupation took place. All these are evidenced by floor-levels or structures of brick (*Fig. 20 b*). These occupations reveal more or less same features, hence only the most important ones are noted below.

Phase I

The first phase of occupation of Period IV lay immediately on top of the weathered horizon and consisted of a flooring made of lime, brownish clay and hemp pieces mixed together and spread over.

This floor which was traced in all the trenches of Md. I and even in Tr. X on Md. II showed the extensive nature of the first occupation of the historical period. On Md. I itself it covered an area roughly 80 ft. × 20 ft. The very extent suggested that it probably comprised more than one room or house.

The floor which was nearly three inches in thickness lay directly on the then available even surface. The markings of the weathered surface show that at the time of the occupation of this surface, it was a very even level which could be occupied without involving much labour or it might have been levelled by just scrapping. In this floor wooden posts, remains of one of which were found in the S-W corner of Tr. A, were sunk. A series of circular post-holes in Tr. A and elsewhere were found which evidenced the existence of such wooden posts of a diameter varying between two and three-and-a-half inches, which supported the roof above.

The indifferent plan of these post-holes was not very helpful in determining the size of a room. However, the extent of the floor and the number of post-holes indicated the existence of probably two or three rectangular rooms within one house.

We have no idea as to what material contributed to the making of the walls. Though as a whole, this period shows acquaintance with bricks, no bricks in any form were found associated with this phase. It may not be wrong therefore to presume that the walls might be of clay. Similar is

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the case of the roof. Tiles have been found in this period; but as will be noted below, they become more abundant in the next period. No tile pieces were found associated with the lime floor of this phase. As such, the habitations of Phase I of Period IV, must have been of a simple nature, though extensive.

Storage jars of various sizes—some 1 ft. 10 in. in diameter—were found embedded at three places (Trs. A, G, D) right into the floor. In one case, supports in the form of a thick black clay bedding and small stones were given at the base of these storage jars. The position of the nearby post-holes indicated that these jars were installed at the sides of a room rather than in the centre. The contents of these storage vessels were ash and earth.

No clue as to the cause of the distruction of the habitation of this phase was found.

Phase II

The next habitation came immediately after that of Phase I. A deposit of nearly seven inches intervened between the lime floor of Phase I and the brick-structure of Phase II.

In Tr. G (depth 18 ft. 8 in.) were found the remains of a brick wall running N-S. As it was, it stood as an isolated structure unconnected with any other brick-structure. The wall had no foundation and hence was sunk in the middle. The bricks measured 1 ft. 11 in. (length) × 10 in. (breadth) × 3 in. (thickness). Three courses of such bricks cemented in brown clay accounted for the eleven inch extent height of the wall which ran to a length of 8 ft. 10 in. A single brick laid at right angles at the lowermost course indicated the existence of or the plan of an arm running E-W (*Fig. 22 a*).

No idea as to the full dimensions of this structure could be had. No other brick remains were found at this level in any other area. Therefore, the purpose of this brick-wall could not be ascertained. Patches of a flooring of hydraulic lime mortar nearby definitely indicated the existence of a well-made floor associated with this structure. For want of extensive corroboration, no further details regarding this phase could be had.

Phase III

The third habitation of Period IV was evidenced by a very extensive floor of hydraulic lime mortar and a soak-pit at a depth of 17 ft. 10 in. in Tr. H.

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NVS. SQ. A BURIAL URNS I-Ia

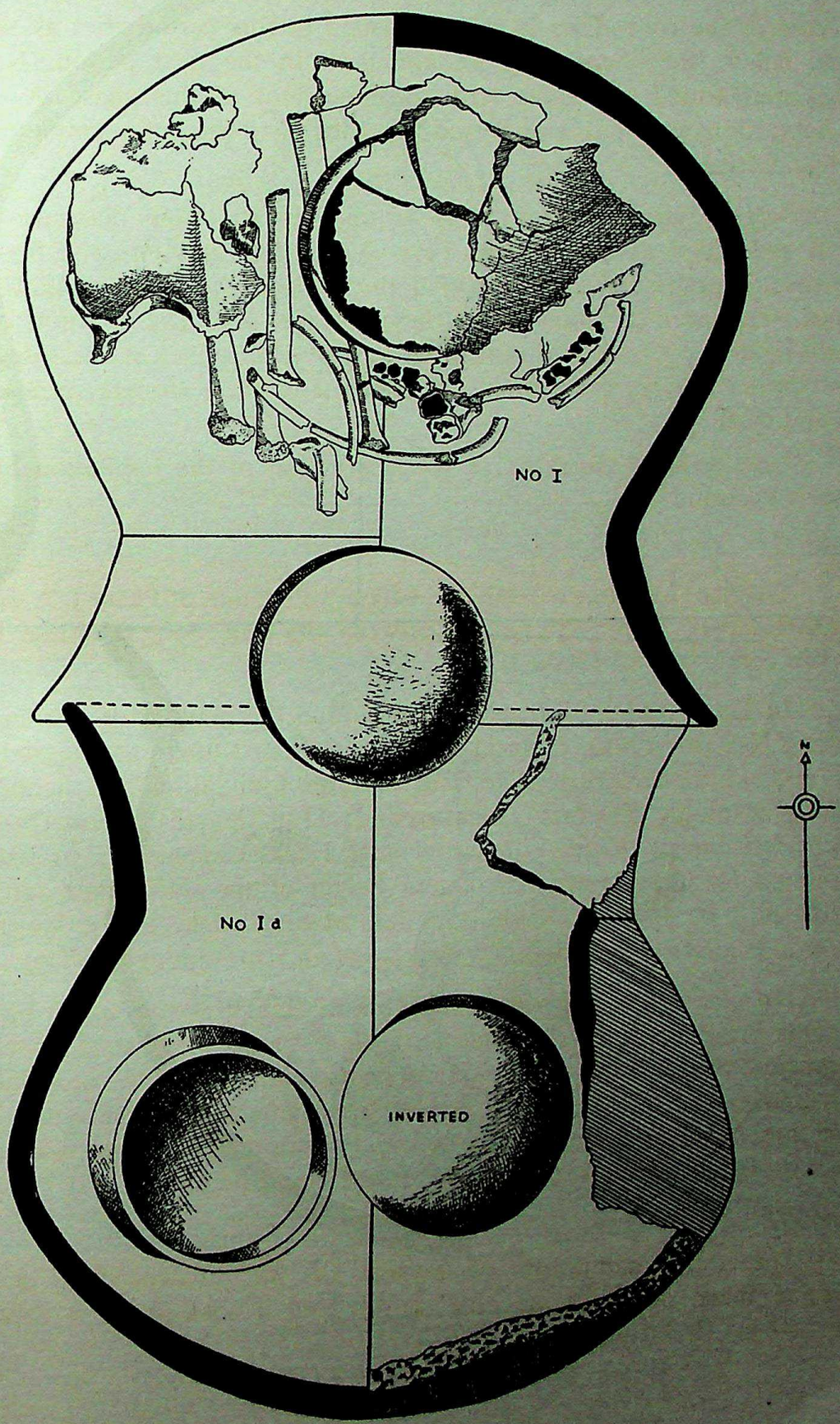

Fig. 12: Burial No. I, Tr. A, after opening. NVS. (1954-55). See p. 24

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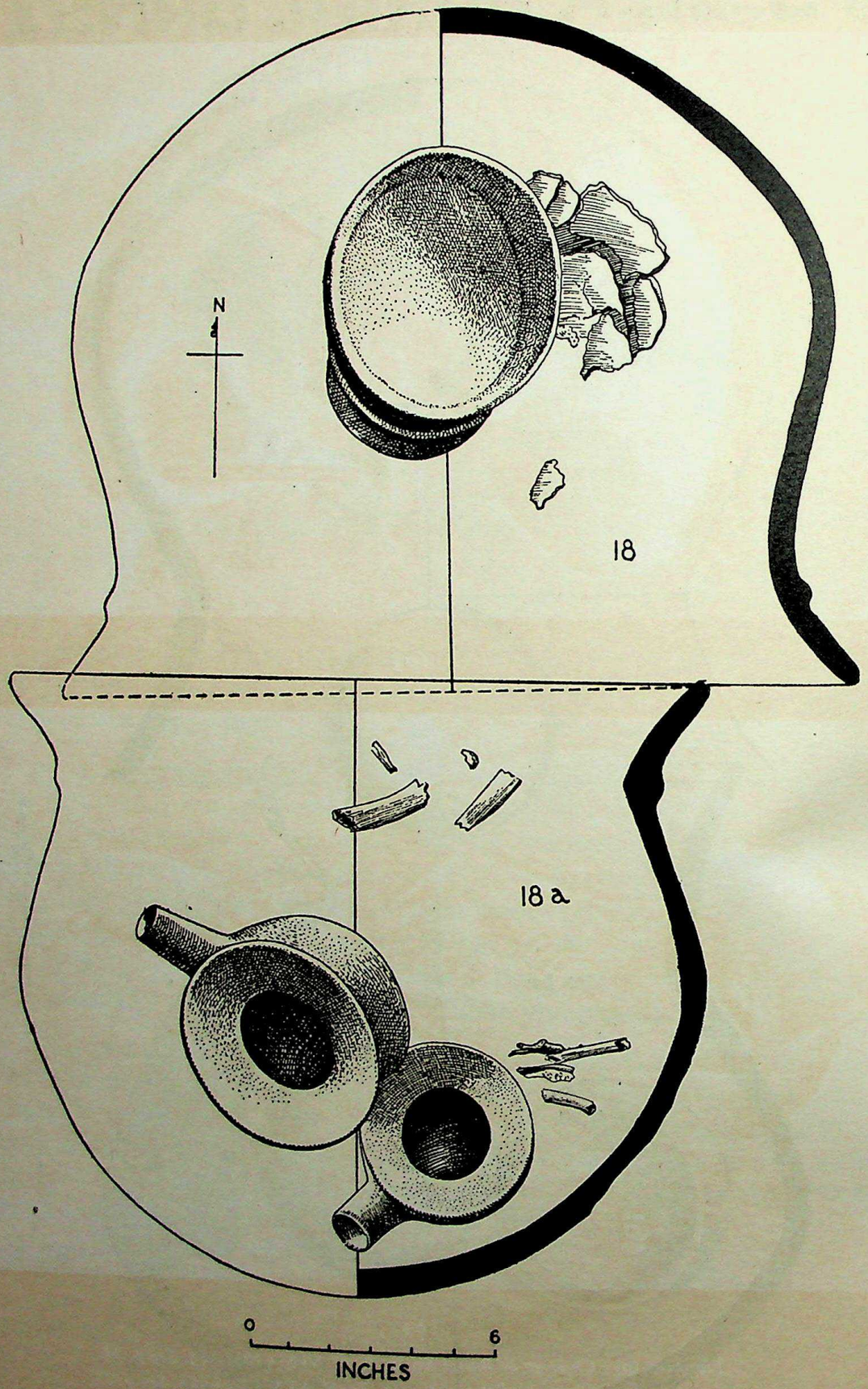

Fig. 13: Burial No. 18, Tr. E, NVS. (1955-56). See p. 24

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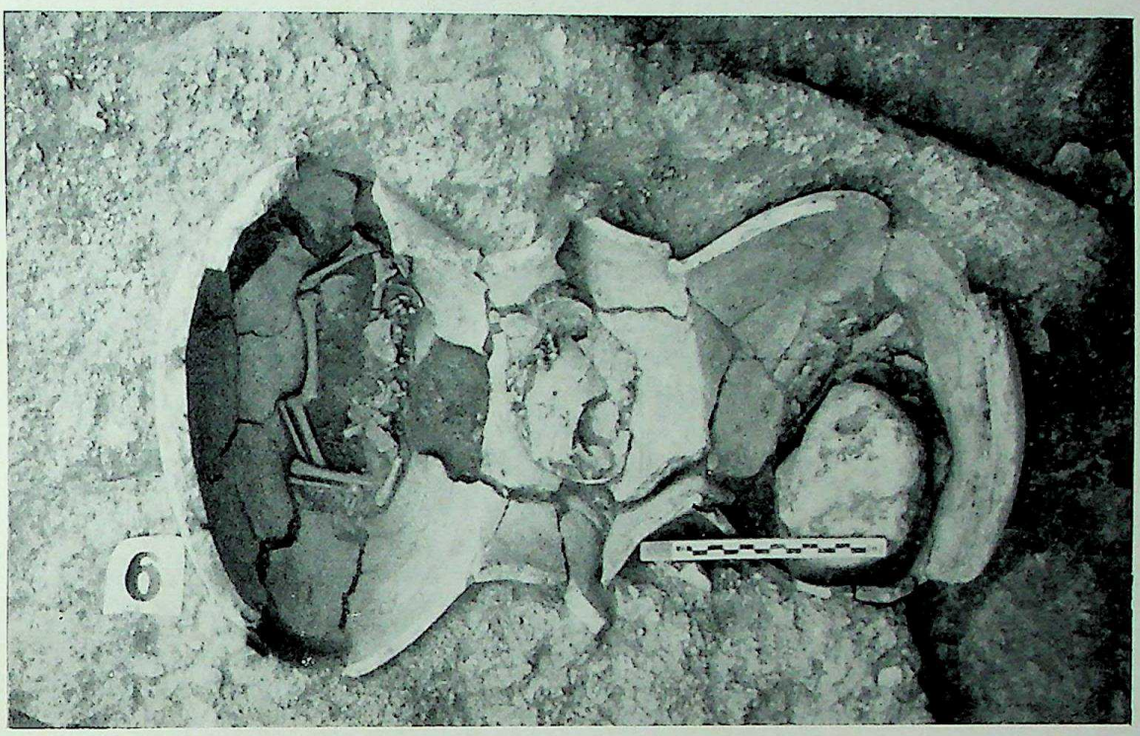
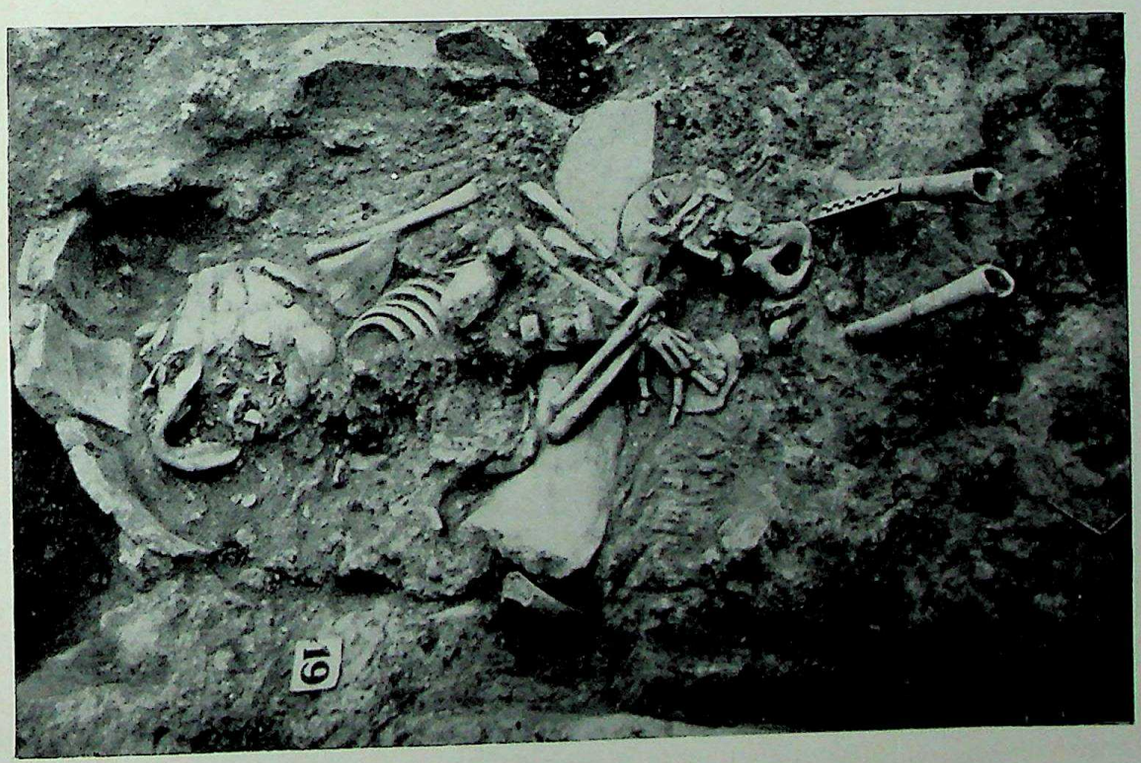


(*a*)



(*b*)

Fig. 14: (*a*) *Close-up of Burial No. 6, Tr. F, NVS. (1955-56). See p. 24.*
(*b*) *Close-up of Burial No. 19, Tr. H, NVS. (1955-56). See p. 23.*

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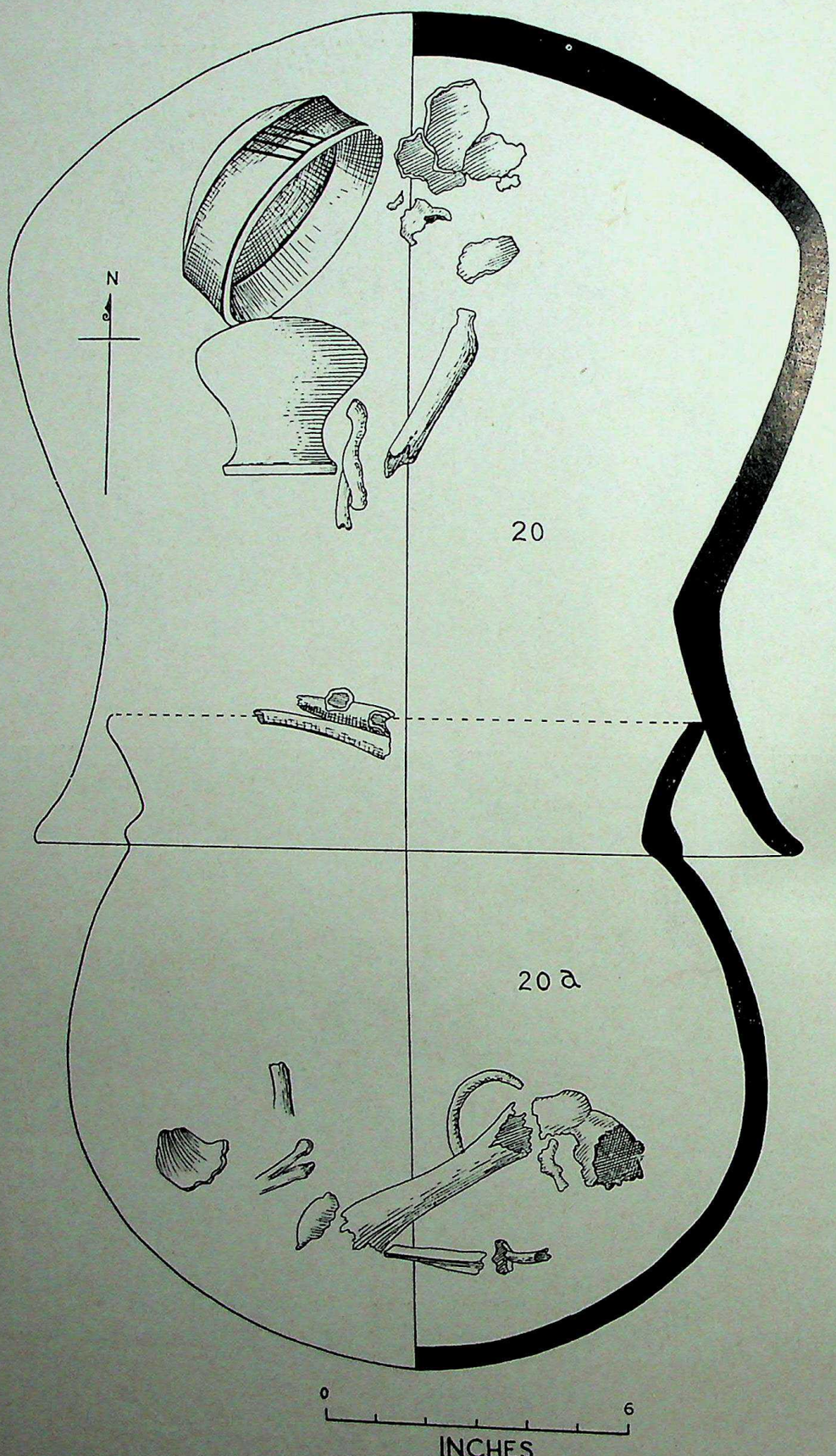

Fig. 15: Burial No. 20, Tr. E, NVS. (1955-56). See p. 24.

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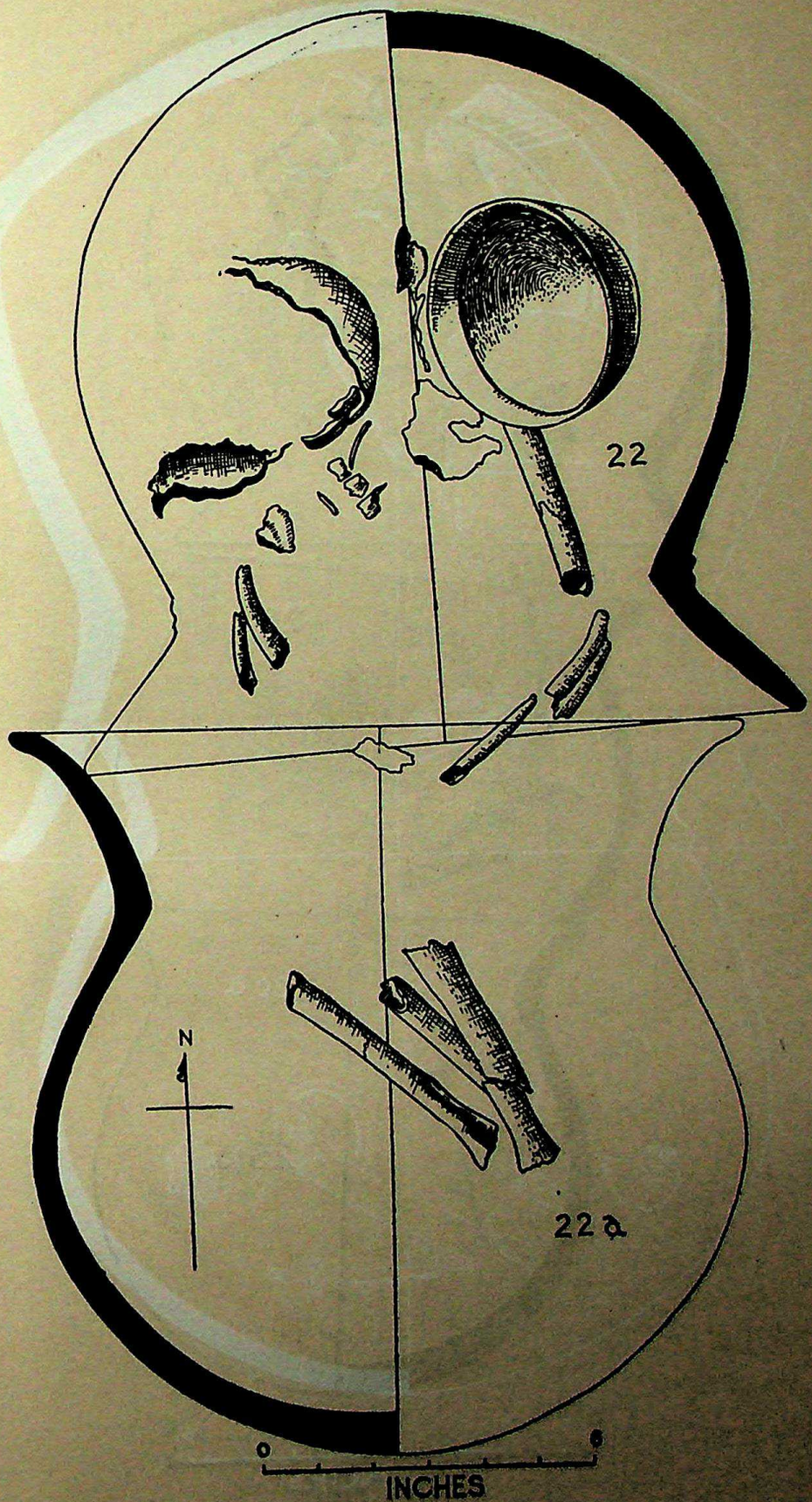

Fig. 16: Burial No. 22, Tr. H, NVS. (1955-56). See p. 24.

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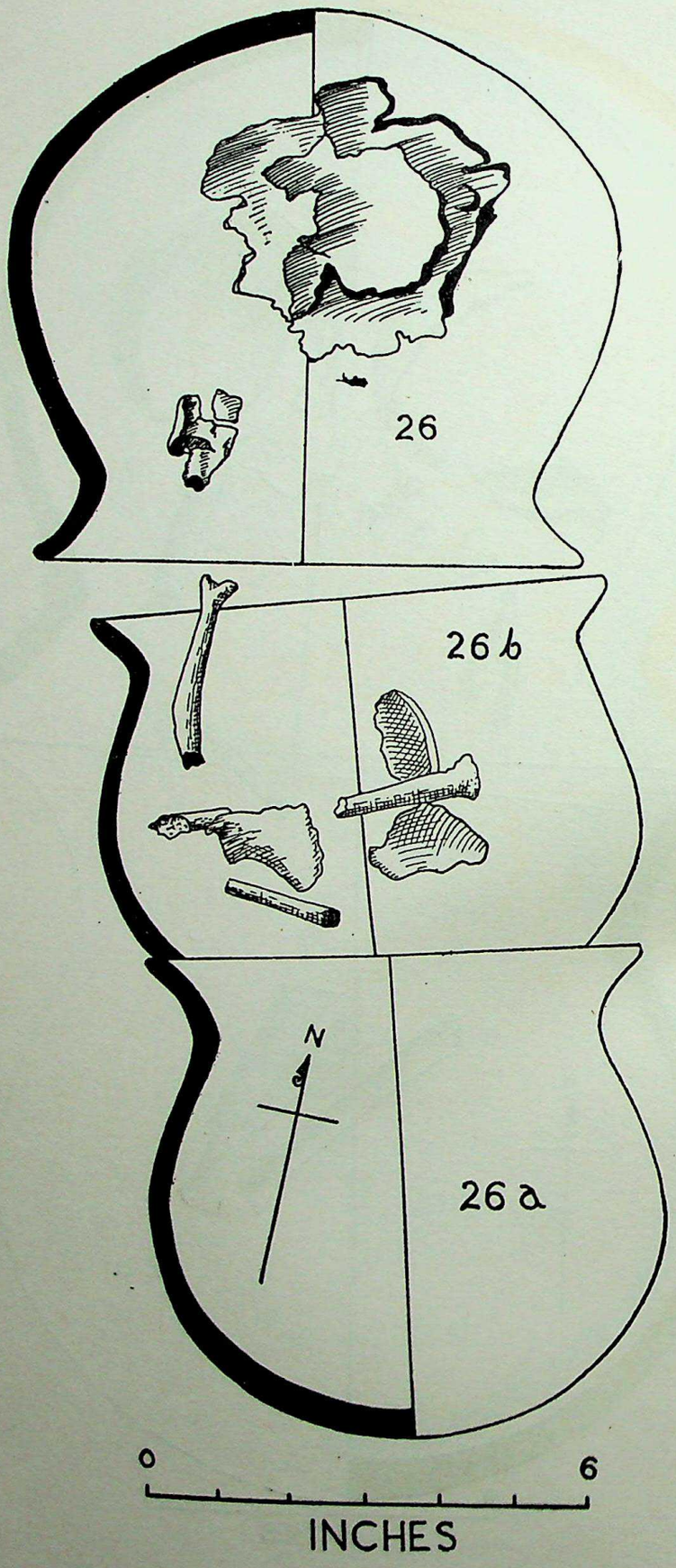

Fig. 17: Triple Urn-burial, No. 26, Tr. F, NVS (1955-56). See p. 23.

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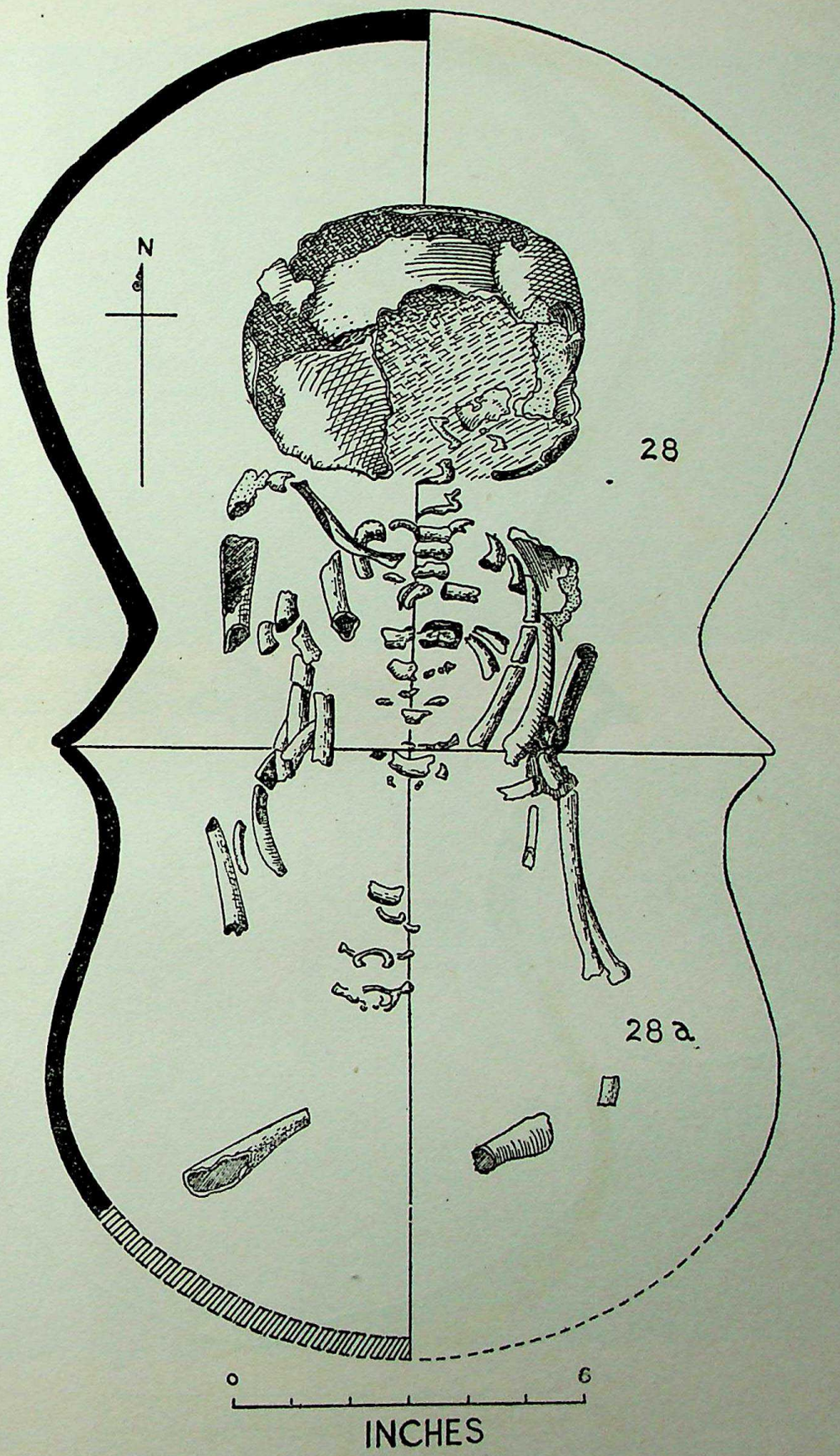

Fig. 18: Burial No. 28, Tr. H, NVS. (1955-56). See p. 24.

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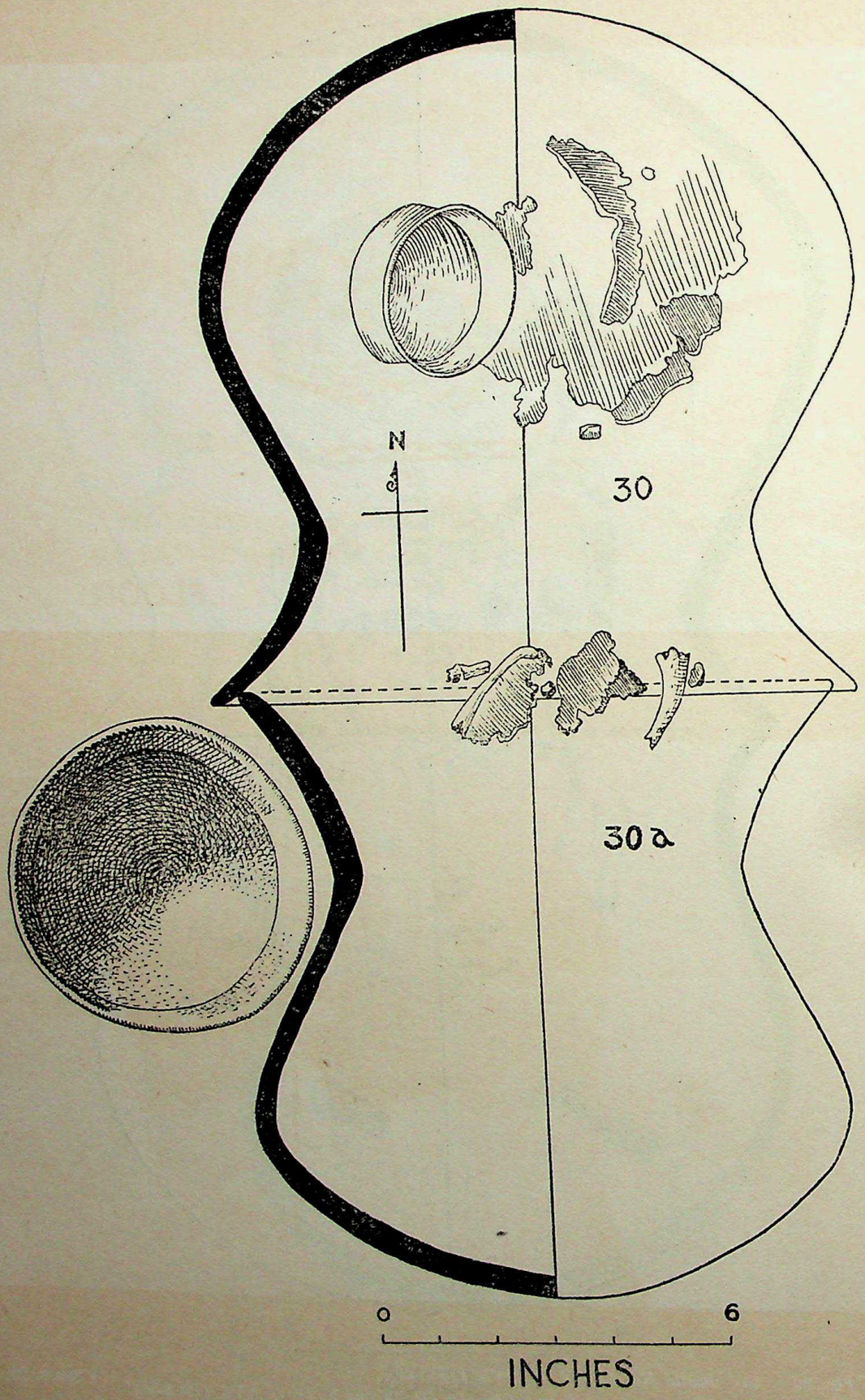

Fig. 19: Burial No. 30, Tr. H, NVS. (1955-56). See p. 24.

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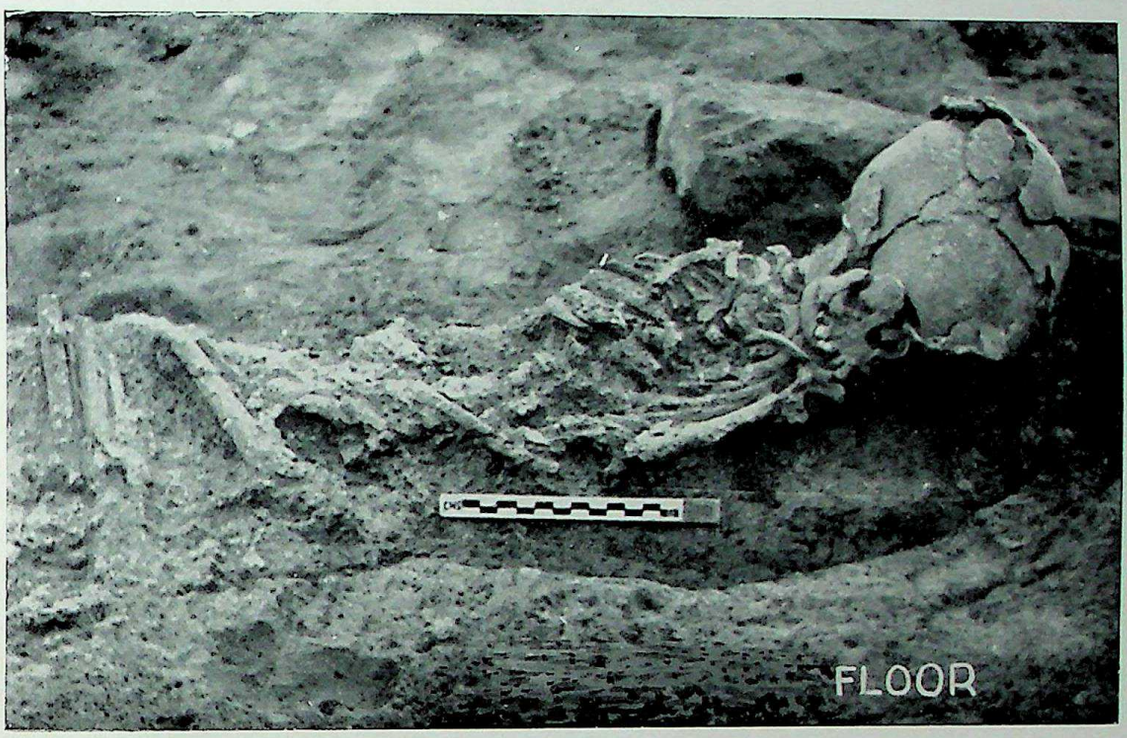

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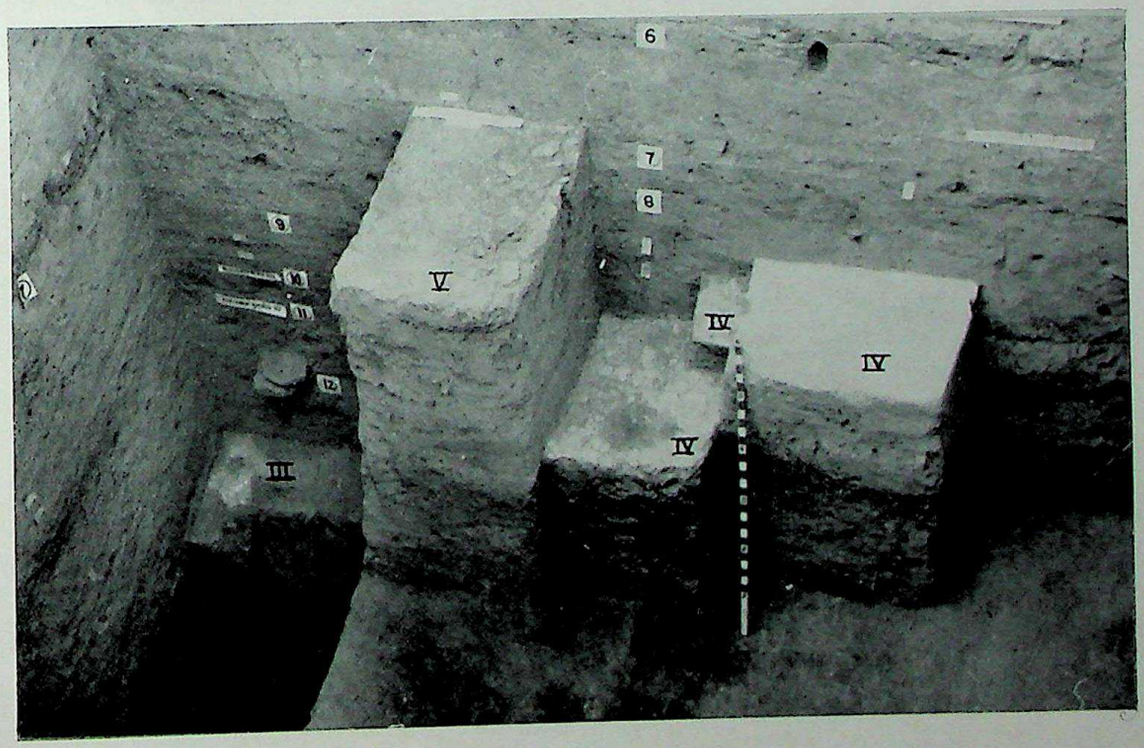

(*b*)

Fig. 20 : (*a*) *Burial No. 14, Tr. Z, NVS. (1955-56).*
(*b*) *Close-up of lime floors of Periods III, IV and V, Tr. G, NVS. (1955-56).*

See p. 23.

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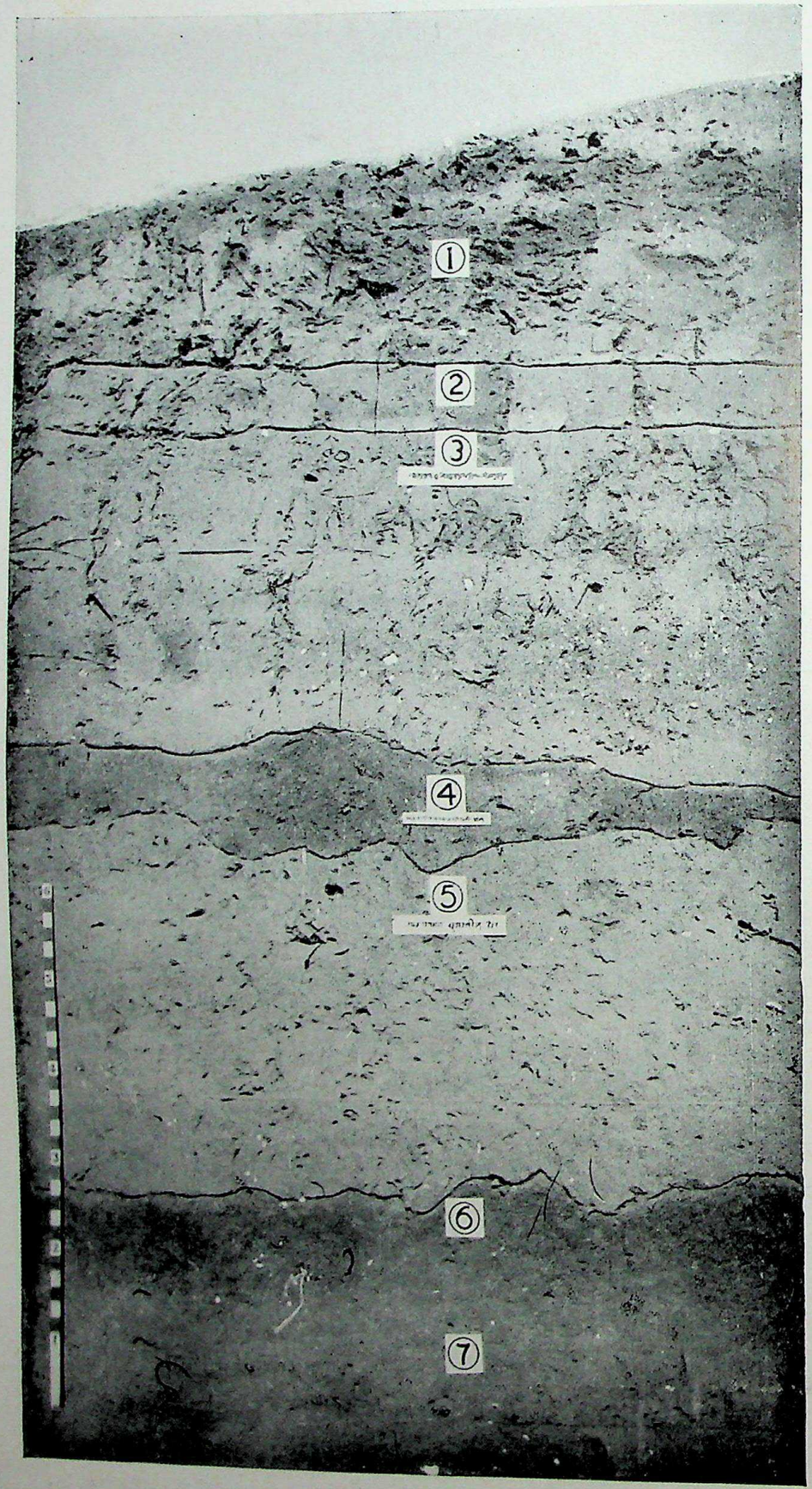

Fig. 21: Section facing east, Tr. X, NVS. (1955-56). Layer 4 represents weathered horizon. *See pp. 17, 29, 65.*

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The flooring of hydraulic lime mortar was nearly 3½ in. thick but was very patchy. However, its extent covered an area co-extensive with the trenches on Md. I. A number of post-holes, all mostly circular, and a few squarish, indicated the size of the posts which ranged between 3¼ to 4½ in. in the former and 2½ in. in the latter. These, however, were found in a very indifferent plan. Inspite of this, it is certain that they must have contributed to more than one apartment or room.

Besides the patches of hydraulic lime mortar flooring, several lumps of clay were found. These should be of the walls which made up the debris. These lumps suffered due to fire and the extensive deposits of white-burnt hay corroborated to the fact that the roof was of hay and that the habitation was destroyed by fire.

The soak-pit five feet in diameter and made of bricks formed an important structural item of this extensive habitation. No post-holes or patches of hydraulic lime-mortar were found nearby the soak-pit, indicating that it lay a bit outside the actual floor or residential area of a house.

The extant courses of the soak-pit were fifty in number, each brick measuring 2½ in. in thickness, 10 in. in length and 7 in. in breadth. The total height was 10 ft. 9 in. of which 6 ft. 3 in. was dug right into the yellow silt. The original height must have been more than this as the pit showed (Fig. 11) the removal of the upper courses. Nearby the soak-pit, were fragments of two querns which might have been thrown near the pit which itself was the repository of refuse of various articles such as broken pots and rotten corn.

Taken as a whole, the evidence of this phase indicates the existence of more than one-room tenements. Floors were made of hydraulic lime mortar and the walls probably of clay. The plan, though not clear, testified to the rectangular rooms the walls of which were supported by wooden posts. The absence of tiles, the extensive deposits of burnt hay and the baked clay lumps pointed to destruction by fire. In such a plan, the soak-pit lay outside the proper residential area, though not very far off (unless it belonged to the adjoining house).

Phase IV

The next phase of occupation of Period IV was exposed at a depth nearly 15 ft. in Tr. E. This comprised a series of close-running thin lime floors. It is likely that these thin deposits represented the frequent raising

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up or coating of the original floor. This is reminiscent of the cow-dung coating frequently given to the floor of a house in rural areas even now.

This flooring was the most extensive in the trench referred to above, but was found to have existed even in other four trenches (G, A, H and D). (See Figs. 26, 27, 28, 29 and *22b*). However, its extent to areas west of Md. I was evidenced by similiar floor at the same level in Tr. I (Figs. 23, 25) and in Tr. Y. (Fig. 30). It thus shows that even the western area of the mound was inhabitated during this phase.

As in the preceding phase, here too no remains of any brick or clay walls were found. However, the existence of scores of post-holes and remains of wooden stumps showed that these were sunk into the floor. For the first time, we have the evidence of tiles associated with this floor. It, therefore, presents the picture of houses with lime floors, clay walls, and roofs covered with tiles.

The house was furnished with storage jars embedded into the floor with the support of black clay and gravel. Three such storage jars were found associated with this floor in Trs. D, G and H. These were 2½ ft to 3 ft. in diameter and must have been used for storing grain, as grain in charred form was found right on this floor.

The most remarkable feature of the habitation of this phase was the use of stone blocks for some sort of pavement. Associated with this floor was exposed in Tr. E an area roughly 9 ft. × 5 ft. fringing the eastern and southern limits of this floor, in which undressed blocks of cemented gravel conglomerate were so laid that their even surfaces were upwards.[1] The space in between these blocks was filled up with small zeolite pieces cemented in compact brown clay. It is not possible to say whether this was actually used as a pavement or was used simply as a filling in a depression. Only one course of such blocks was found. (*Fig. 24 b*).

Another notable evidence regarding this habitation was the group of three rotary querns[2] and four saddle querns along with an iron object resembling a clamp. (Figs. *24 a*, 28).

It is not possible that several such querns were utilised by one family. The concentration at one spot of so many and so fresh specimens

1. Ever now such blocks are broken up near the Hathi well nala and used by the BAROT in his house.
2. See Ch. XV.

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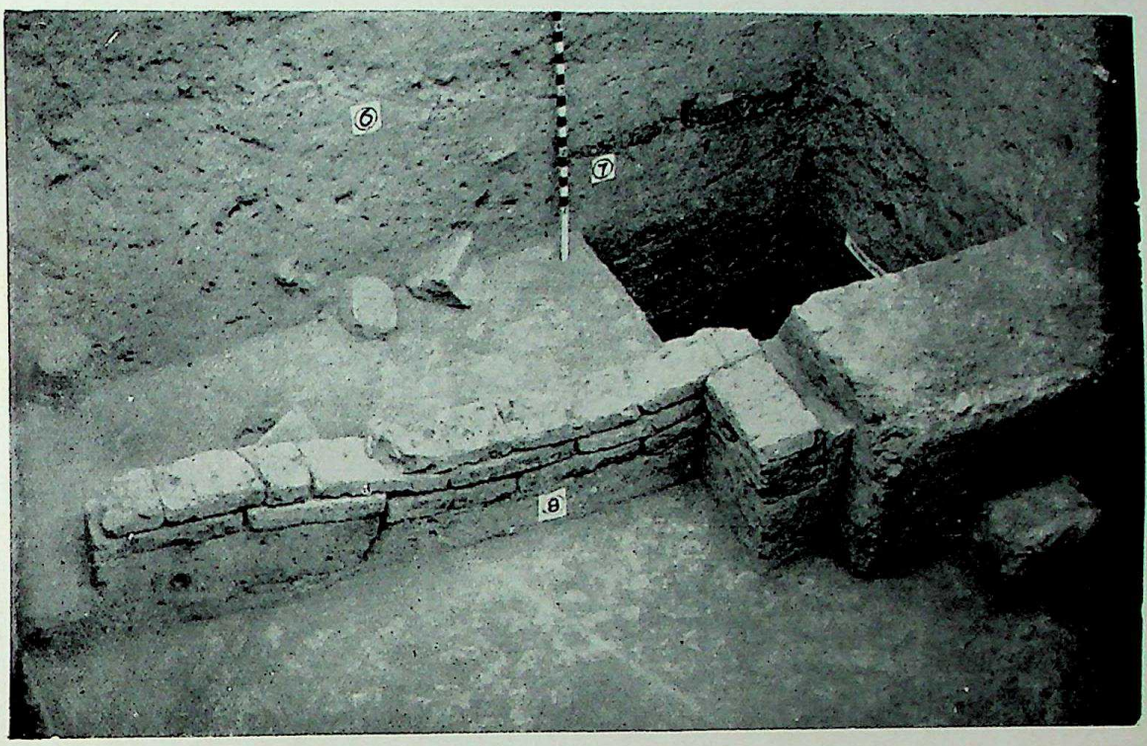

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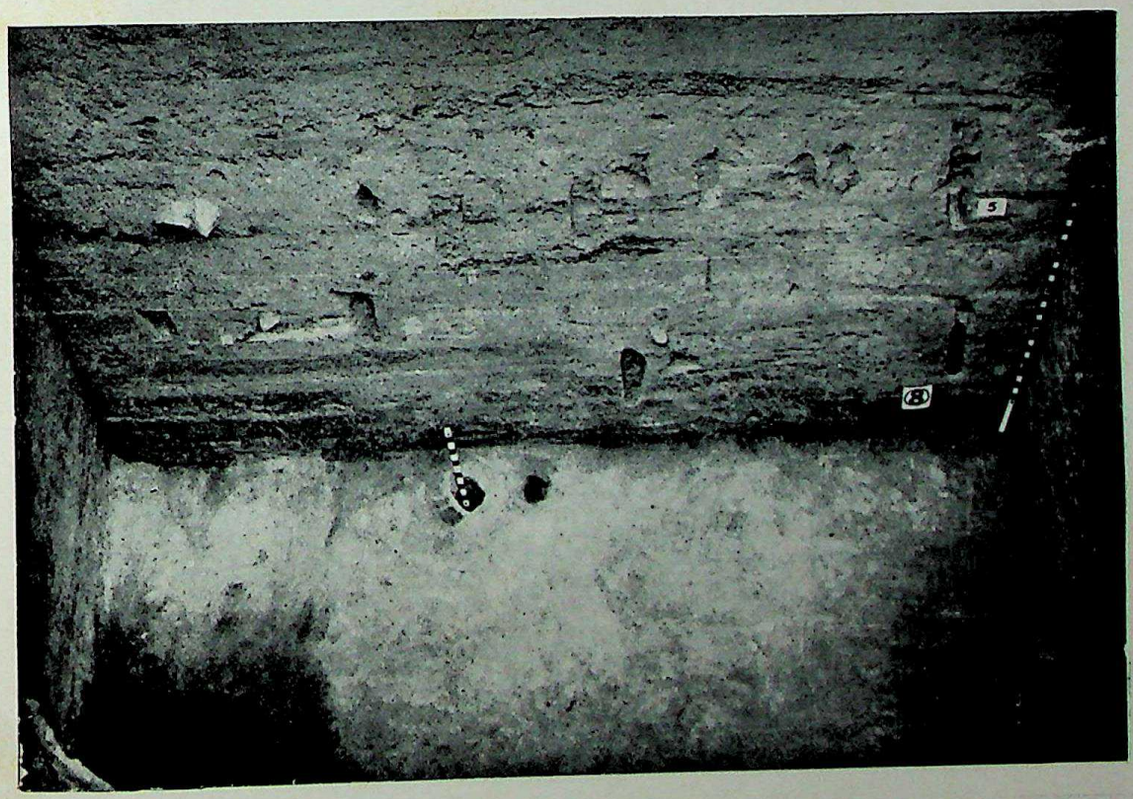

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Fig. 22: (*a*) *Brick structure of Period IV, Tr. G. (1955-56). See p. 30.*
(*b*) *Lime floor of Period IV, Tr. A. (1954-55). See p. 42.*

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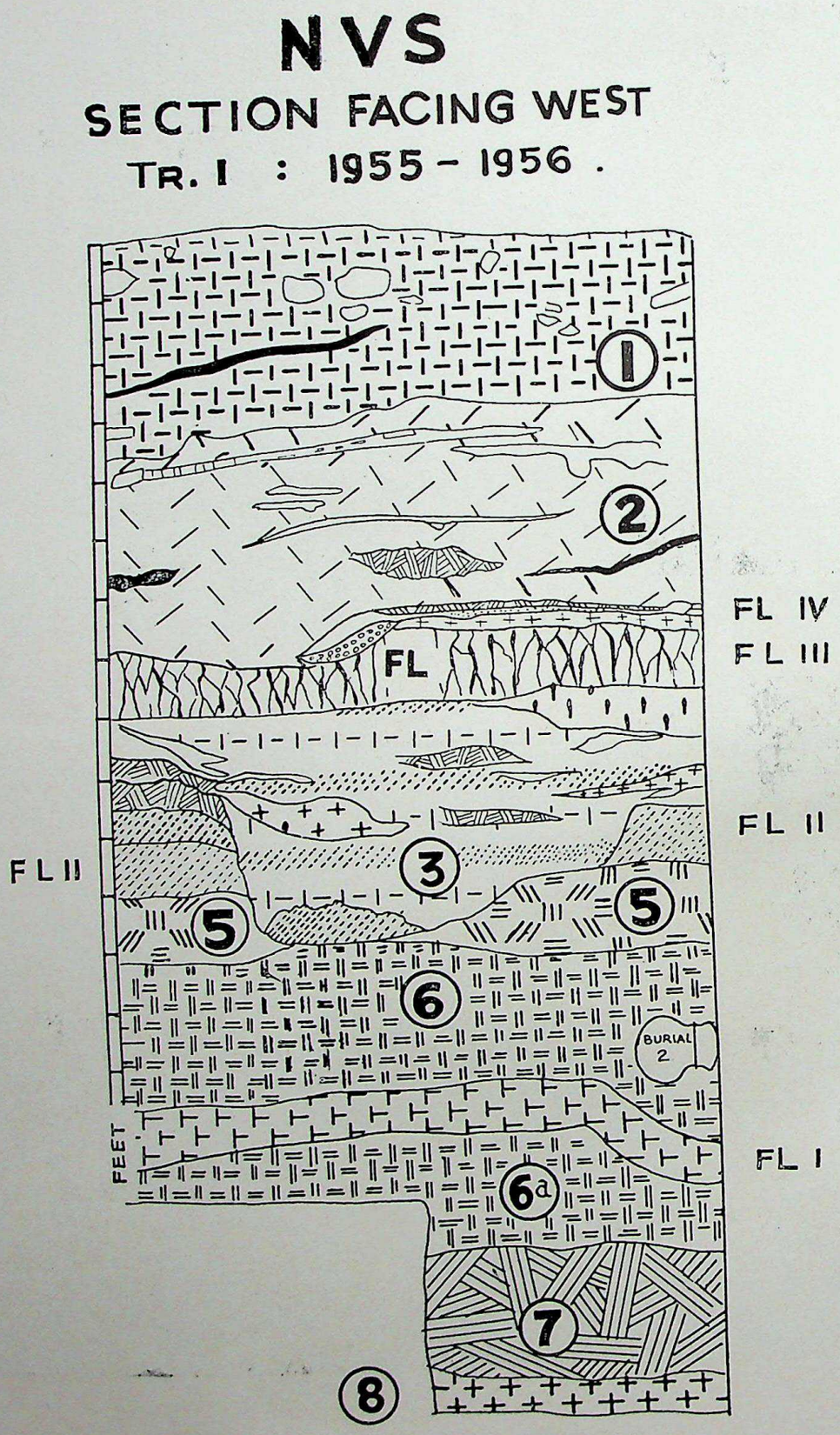

Fig. 23: Section facing west, Tr. I. NVS. (1955-56). See pp. 42, 65.

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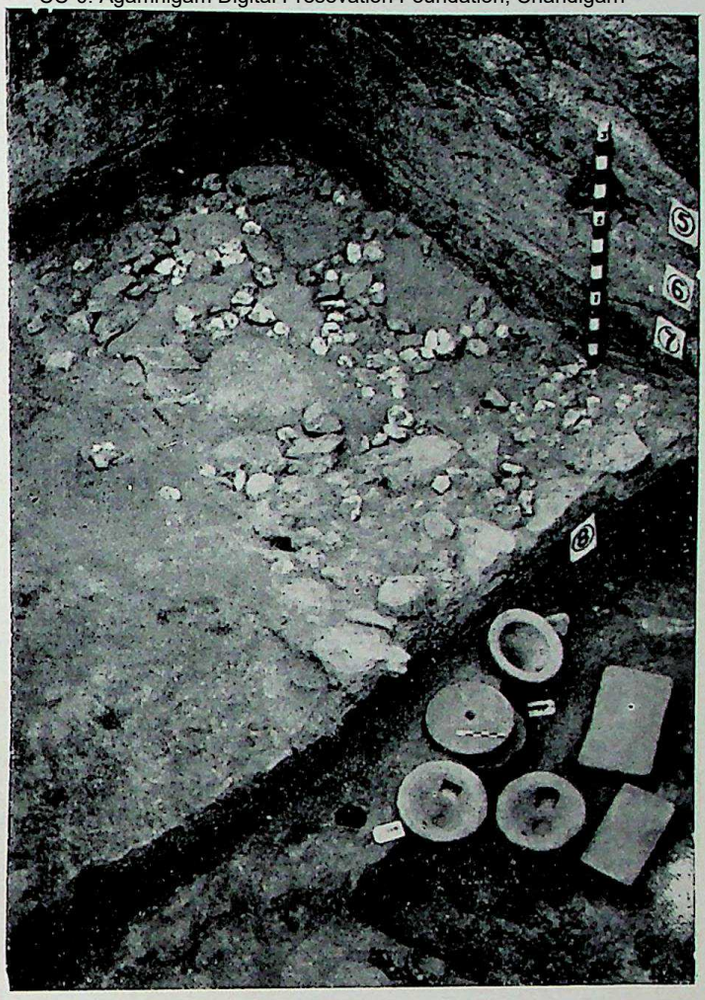

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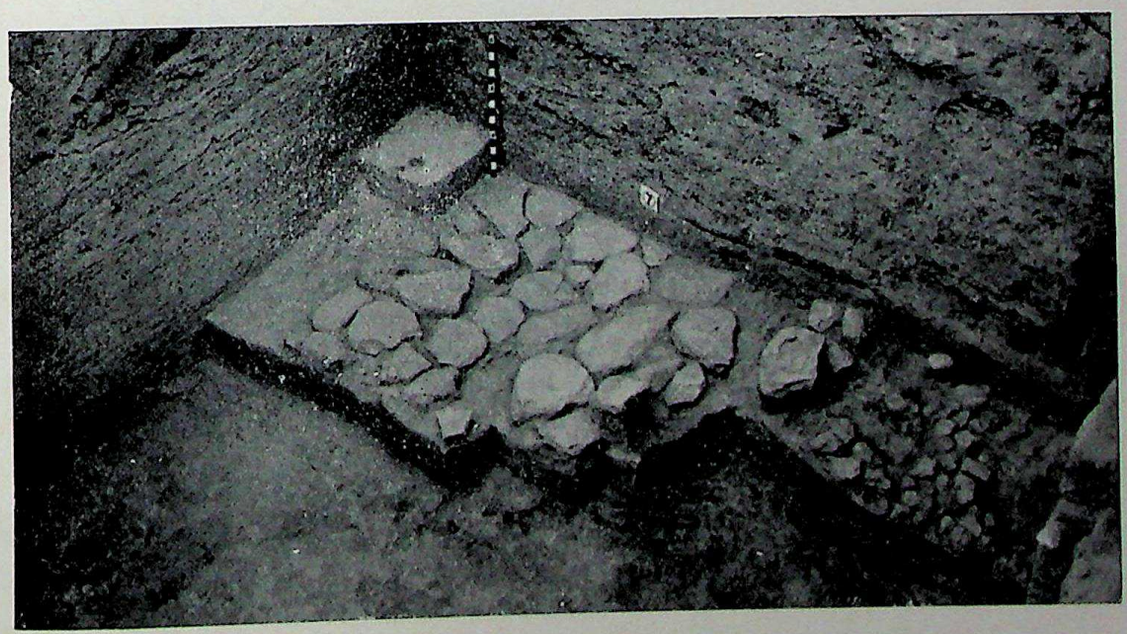

(*b*)

Fig. 24: (*a*) *Plan of stone pavement and querns, Tr. E, Period IV, NVS. (1955-56).*
(*b*) *Close-up of stone pavement in* (*a*).

See p. 42.

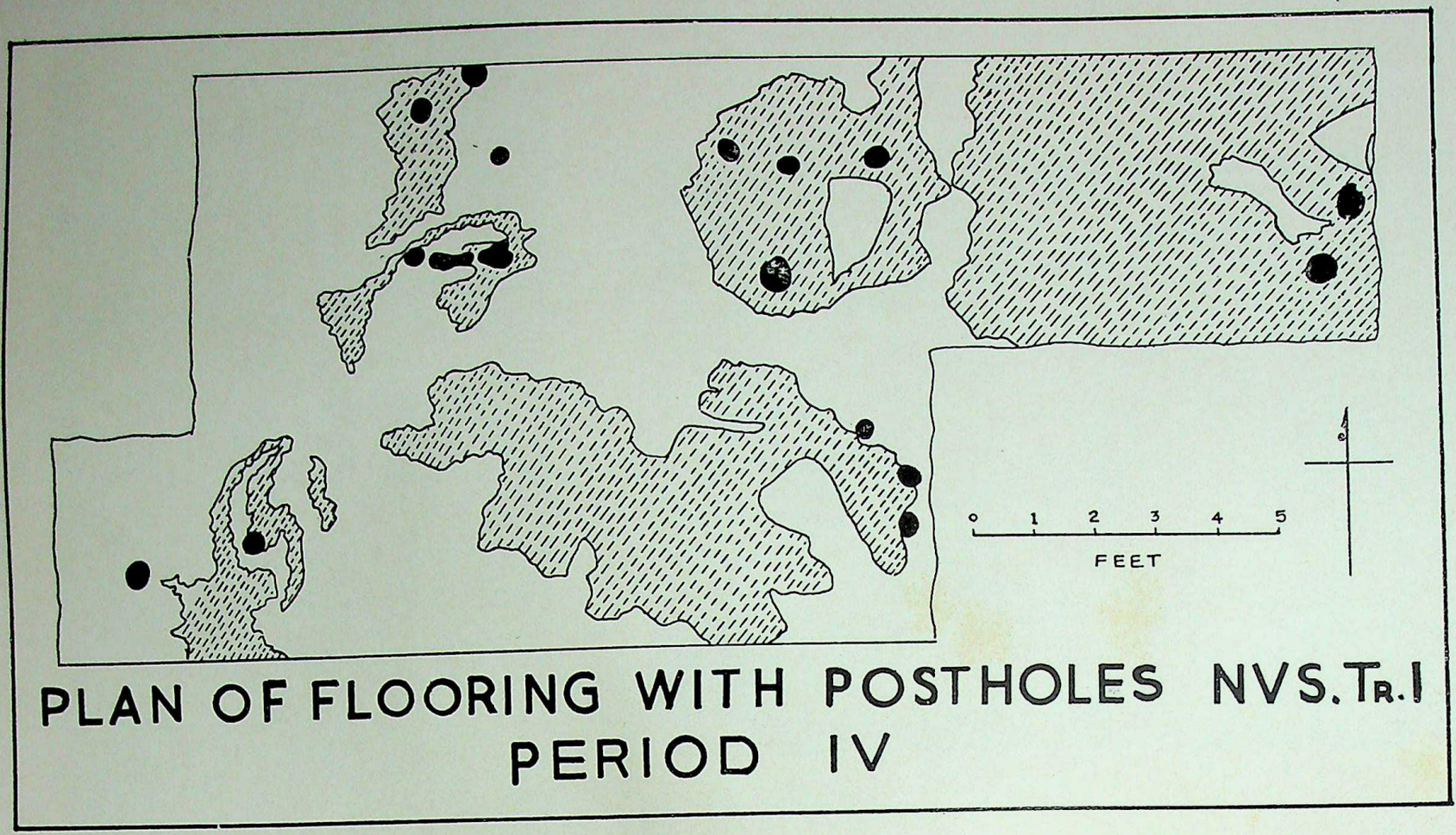

Fig. 25: Plan of lime flooring with post-holes, Period IV, Tr. I, NVS. See p. 42.

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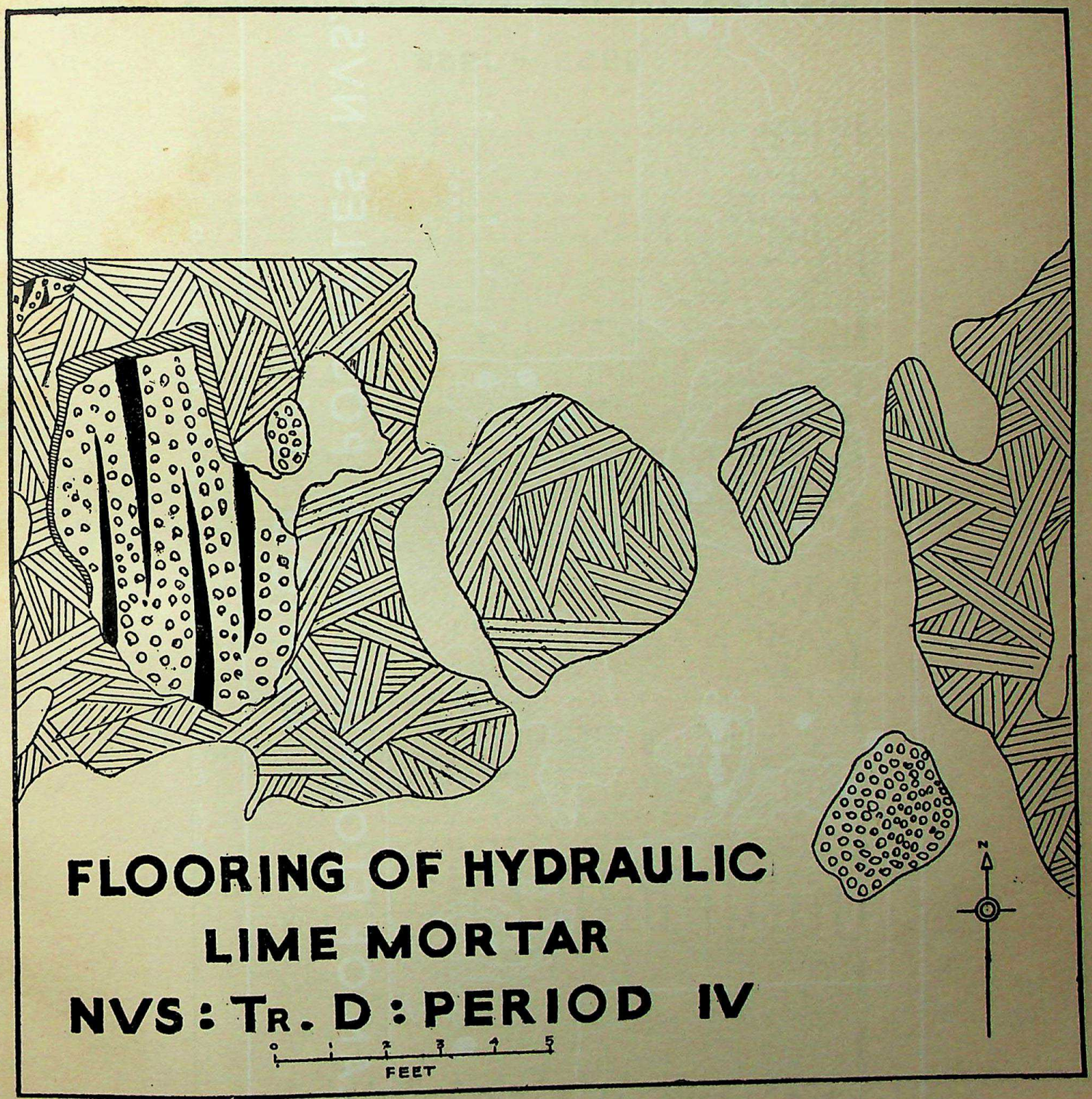

Fig. 26: Flooring of hydraulic lime mortar. See p. 42.

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NVS

SECTION FACING NORTH, TRENCH G

1955 – 1956

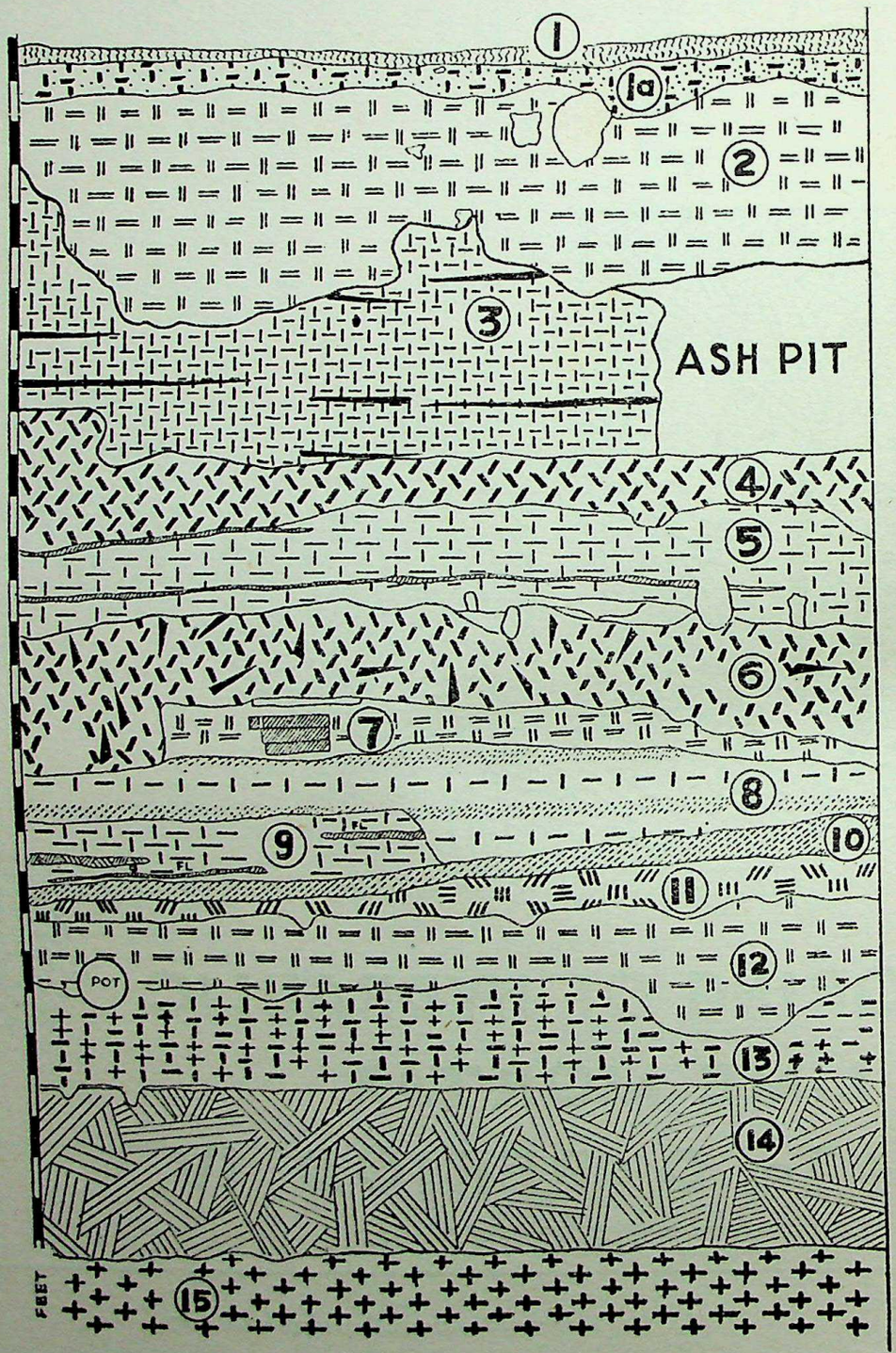

Fig. 27: Section facing north, Tr. G. (1955-56). See pp. 42, 65.

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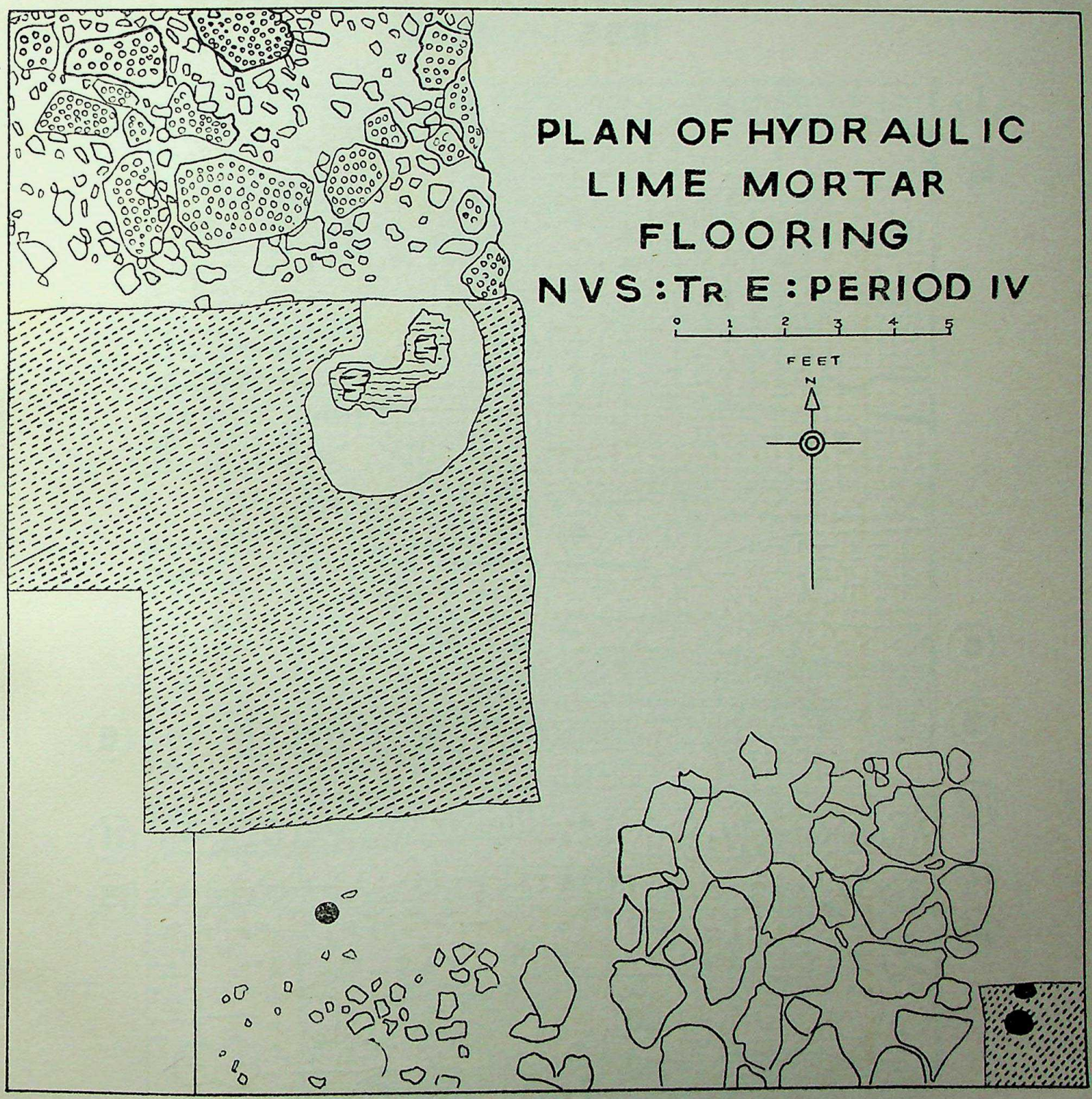

Fig. 28: Plan of hydraulic lime mortar flooring, Tr. E, Period IV. (1955-56). See p. 42.

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NVS

SECTION FACING EAST TRENCH E

1955 - 1956

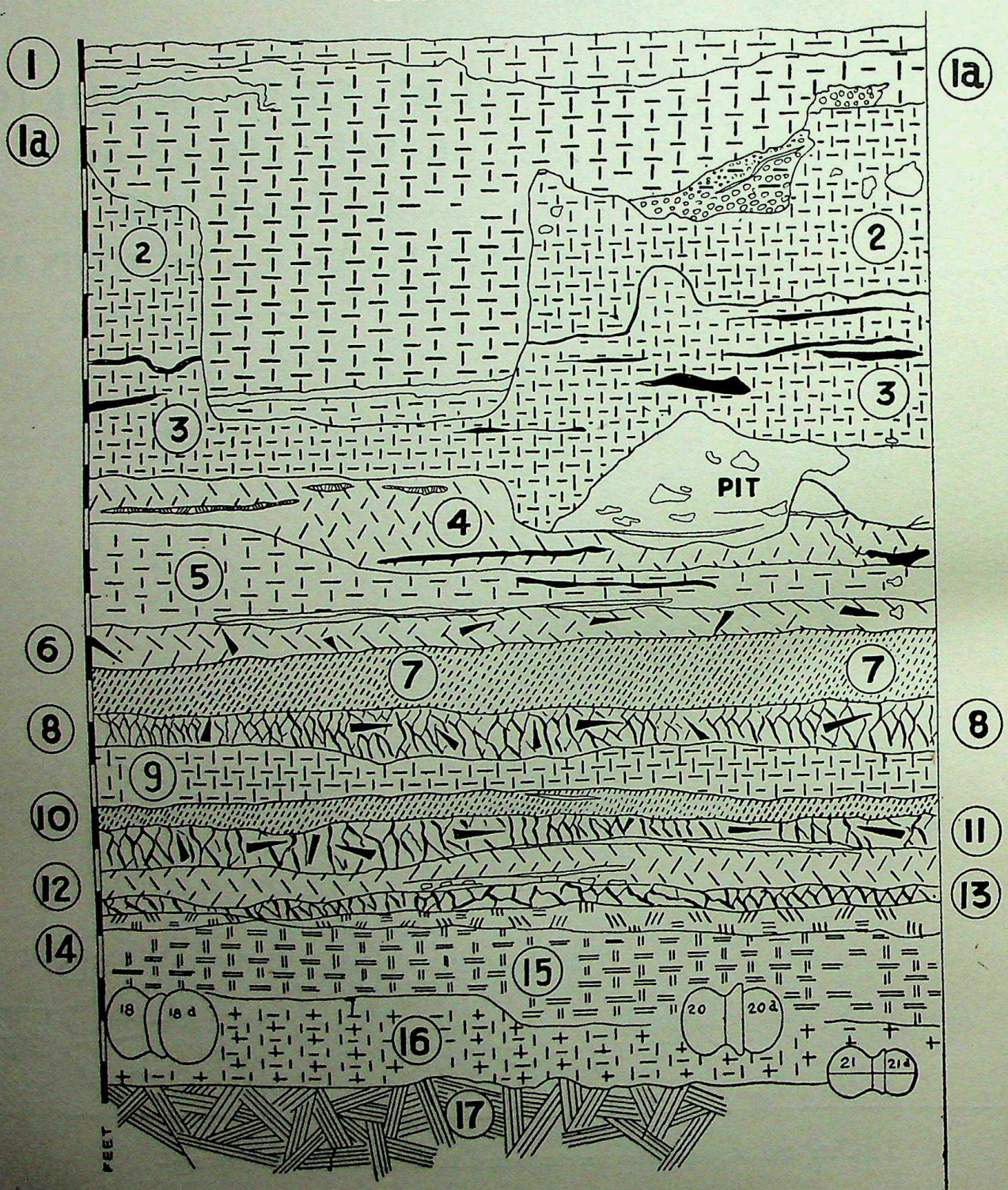

Fig. 29: Section facing east, Tr. E. (1955-56). See pp. 23, 65.

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NVS

SECTION FACING SOUTH, TRENCH Y

1955 – 1956

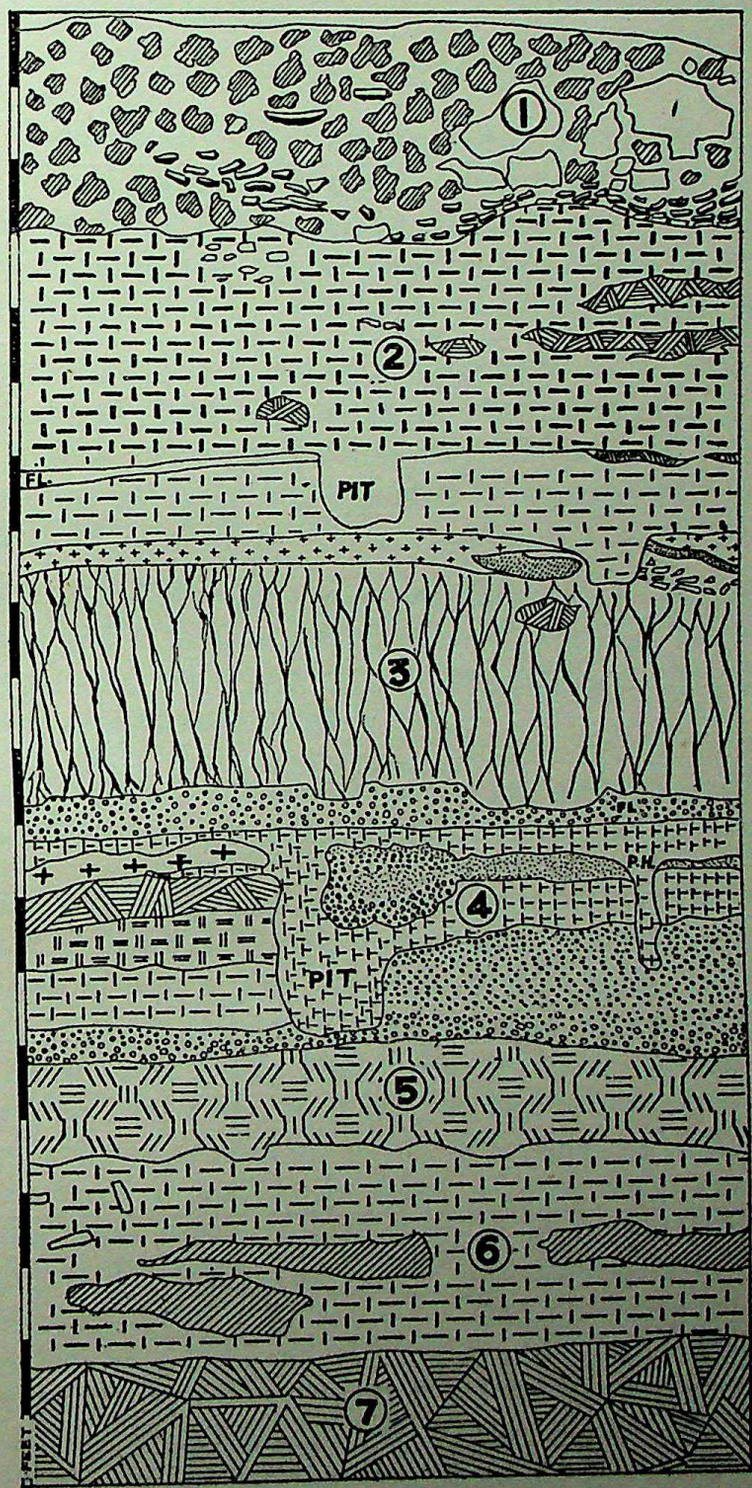

Fig. 30: Section facing south, Tr. Y. (1955-56). See pp. 42, 65.

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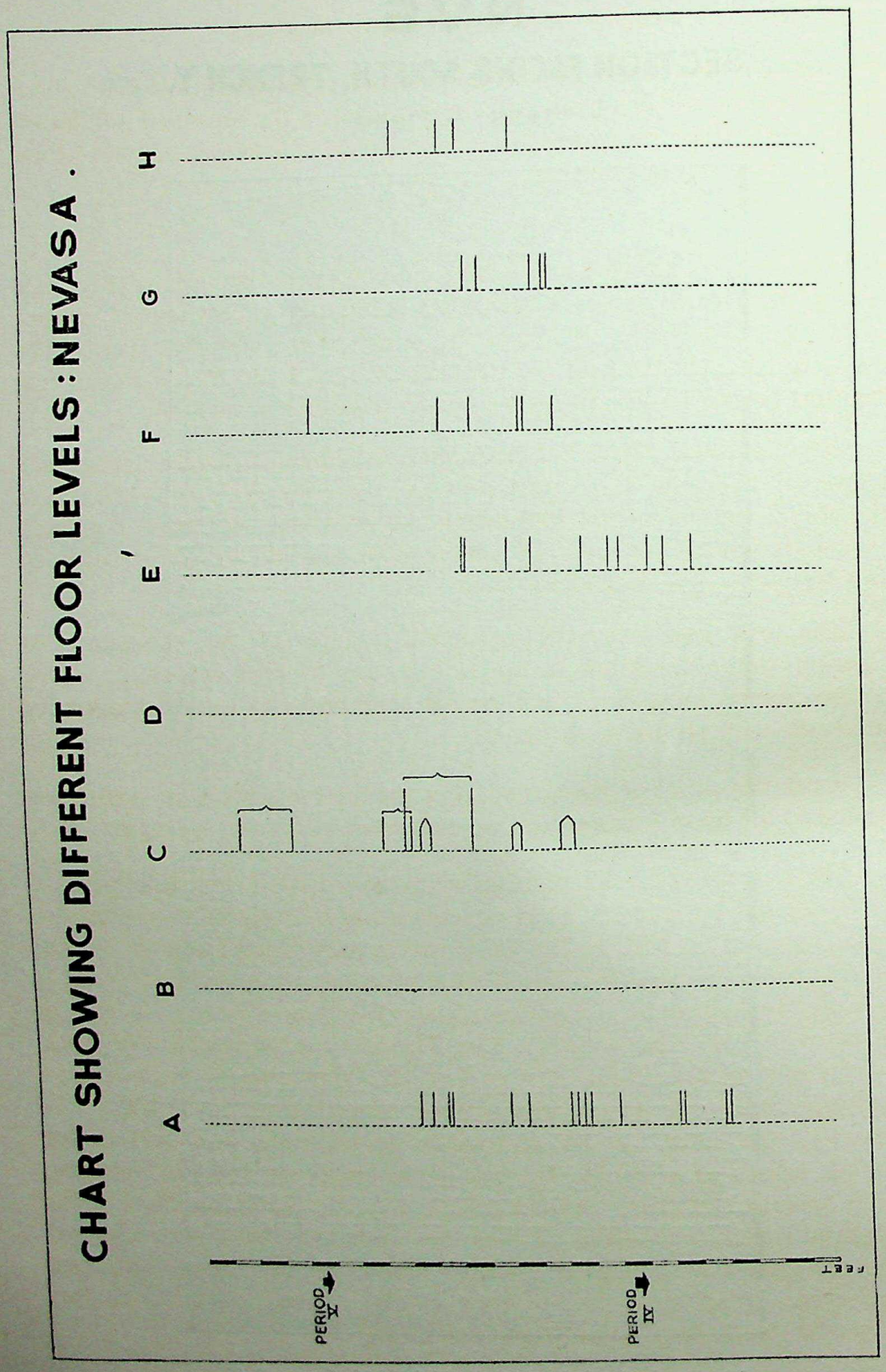

Fig. 31: Chart showing different floor-levels, Period V. (1955-56). See p. 53.

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might indicate that these were locally made. It is significant that these are not found in earlier phases but are restricted to the top-most habitation of Period IV, which represents the first evidence of external contact along with other, referred to elsewhere.

Period V

Period V witnessed a still quicker succession of habitations (Fig. 31). However, the general nature of all the six habitations except for the important one mentioned below of this period remained the same as in Period IV. These were co-extensive with the trenches on Md. I and thus indicate that during this period Ladmod area was under extensive occupation.

As mentioned above the main features remained mostly unchanged. The lime or hydraulic lime mortar floors, the embedding of storage jars in the floor, wooden posts supporting the roof etc.—all these remained the same. It would not serve any purpose to describe these features once again (*Figs. 32 a & b, and 33 a*).

The only new but very important features of the habitations of this period were the extensive use of tiles for roofing, bricks for walls, elaborate foundations, brick and ringed soak-pits and the association of burnt grains with almost each phase.

From this point of view, the last or the top-most phase of occupation incorporates all these features and as such deserves a fuller treatment.

These extensive brick structures were exposed at 8 ft. 4 in. below surface and were sealed by layer 3. They covered an area practically co-extensive with the trenches on Md. I. The westernmost part of the Ladmod did not expose evidence of the extension of these brick structures because possibly these were washed away. The foundation for these structures varied in depth between 1 ft. 7 in. and 1 ft. 2 in. The first course consisted of black sticky clay of a thickness of in. 4 in. to 7 in. Over this came the second course comprising undressed stones which were capped with black clay. The thickness of the latter was so adjusted as to present a level surface for laying the bricks. (*Fig. 33 b*). The size of the bricks was 1 ft. 4 in. in length, 8 in. in breadth and 2½ in. in thickness. It may be noted that though the foundation trench was wide, it was not found to have been covered by the co-extensive laying of bricks. It may be that later habitants robbed these earlier structures of their bricks. Hence, extensive patches of only the black clay foundation remained.

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Even then, whatever remained of bricks and the foundation outline was sufficient to give an idea of the then existing plan. The evidence from Squares D and F revealed that rooms were small in dimensions, measuring between 7½ ft. and 9 ft. It seems that rooms were back to back in a group of four rooms (Sq. D) with openings possibly to east and west.

The maximum number of brick courses found extant was eight, i.e. to a height of nearly 20 inches. The width of the foundation and hence possibly the thickness of the wall itself was normally between 2 ft. 6 in. to 2 ft. 10 in. The bricks were laid horizontally lengthwise. In several cases it was found that the bricks were so placed that the upper brick covered only one instead of parts of two lower bricks. This was surely not a technically perfect mode of brick-laying (*Fig. 34 a*).

The floor of these rooms consisted of black clay, hay and lime. Though the bricks had not suffered in any way, extensive patches of such burnt floors were associated with the remains of these structures almost in all the trenches. In Sq. F, in the northern room, extensive patches of ash and burnt logs of wood were found. Associated with these were abundant remains of burnt grains like wheat and pulses. Inside these rooms were found fragmentary storage jars and globular pots which might have been used for storing the grains.

The plan (Fig. 36) of such rooms was extremely disturbed in Sq. E where what remained was merely a random deposit of brickbats and an irregularly disturbed outline of black-clay foundation. As against this, Sq. C had a long wall some 19 ft. N-S in length fringed at the northern end with a circular step-like formation made up by placing the bricks on their ends. It was 2 ft. 3 in. in diameter and might have served as a step near the door. Another similar but much disturbed plan of a circular arrangement of bricks was found about 3 ft. to the east of the wall in Sq. C. The purpose of this could not be ascertained.

The most interesting structures of this phase were the soak-pits. These were found in Squares H and I. These, though contemporary, could be grouped into three types.

(i) Soak-pit built of bricks of normal shape,

(ii) Soak-pit built of trapezium-shaped bricks,

(iii) Soak-pit built of terracotta rings.

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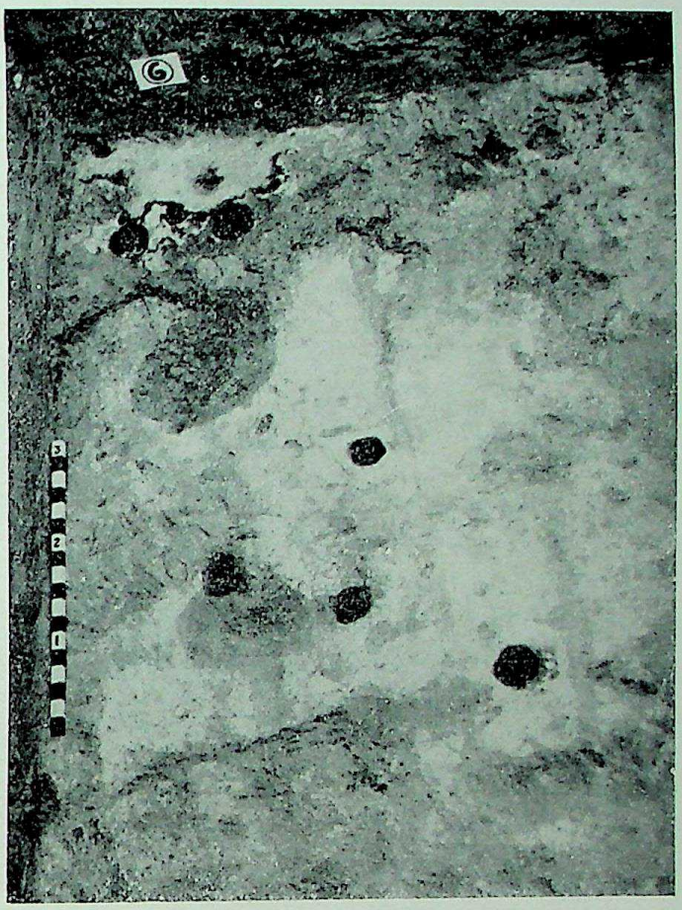

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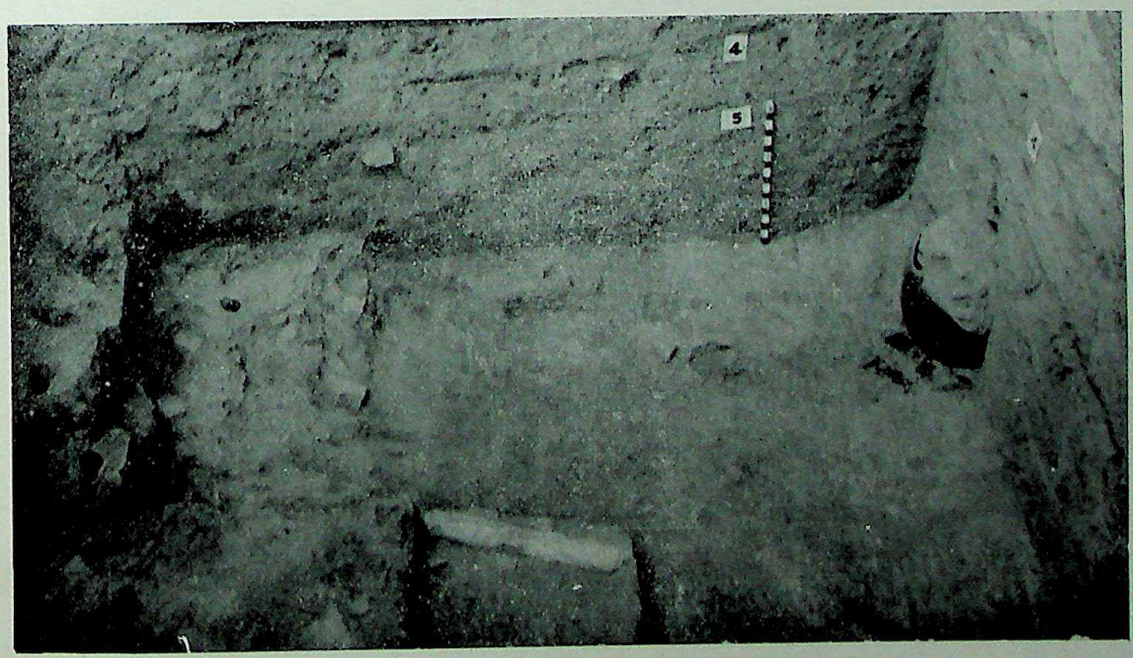

(*b*)

Fig. 32: (*a*) *Close-up of lime floor with post-holes, Tr. E, Period V.*
(*b*) *Hydraulic lime mortar flooring with storage jar embedded, Tr. H, Period V.*

See p. 53.

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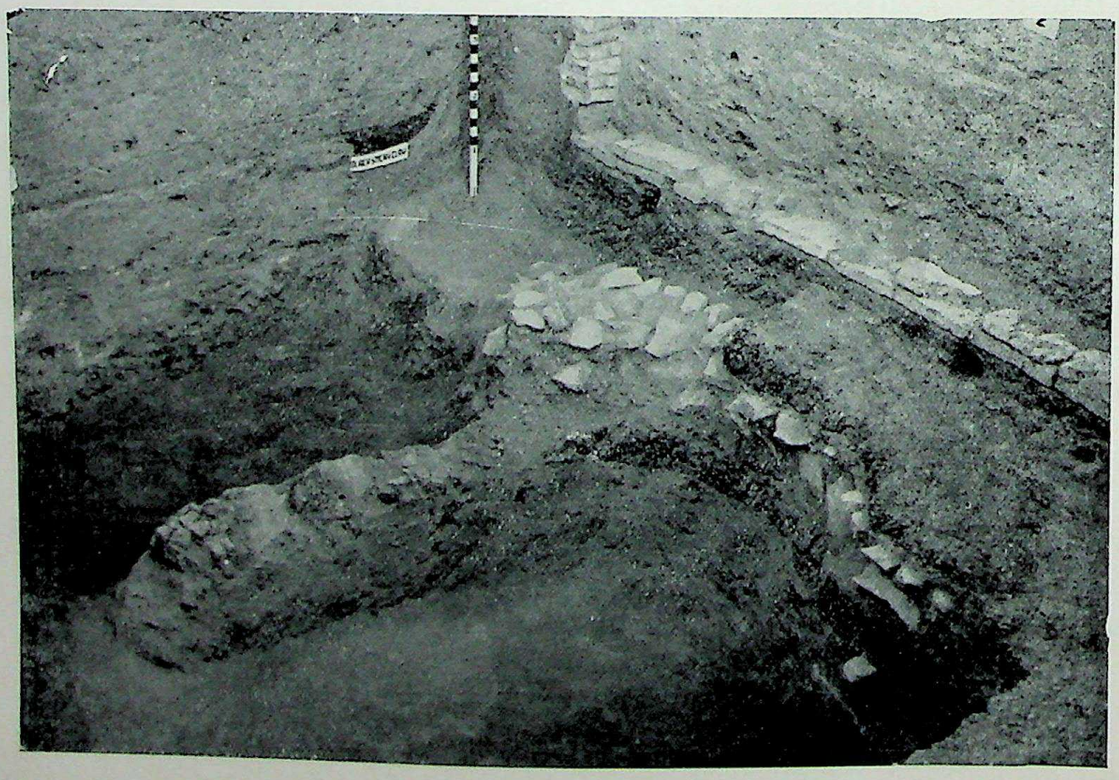
(*a*)



(*b*)

Fig. 33: (*a*) *Remains of stone foundation and lime floor, Period V, Tr. G.*
(*b*) *Foundation and remains of brick structure, Period V, Tr. F.*

See p. 53.

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The first was exposed in Sq. H and was found at the same level as that of the brick-structure of this phase. The inner diameter was 4 ft. 6 in However, no evidence of any direct access to this soak-pit could be had from Sq. F which lay to the south of Sq. H. The structure was very much disturbed and there was a break towards the south-east portion. Some bricks were found inside the soak-pit as also close to the west of it showing that they belonged to the broken and missing portions of the structure. A huge patch, nearly 7 ft. × 3 ft. in dimensions and consisting of whitish ash and lumps of hydraulic lime mortar, was exposed close to the broken S.E. portion of the structure. The purpose of this could not be ascertained.

That the access to this soak-pit was from the N.W. direction was evidenced by the remains of what appeared to be a brick-platform with a storage jar fixed in it. Since there were no traces of any brick wall enclosing this platform, it is apparent that the platform and the storage jar formed part not of residential apartment, but possibly the corridor or verandah. The brick platform covered an area approximating 4 ft. 6 in × 3 ft. The storage jar was fixed while the platform was made. The diameter of the former, the upper portion of which was broken, was 1 ft. 6 in. in diameter and was found to contain earth and ash. Some bricks were fitted right close to it, and it thus had the support of the bricks of the platform. Close to the N.W. of the storage jar lay a muller, and the quern was found in the N.E. corner of the platform. The oven fragments, though found in cloddy lumps were found in the ash patch close to the soak-pit itself. It is apparent, therefore, that the structures as found in Sq. H represented probably the outer verandah of a house.

Another remarkable aspect of this soak-pit was that the size of its bricks differed from those of the platform. The bricks of the platform were equal in dimensions to the bricks of the wall exposed in other squares, but the size of the bricks of the soak-pit cemented in loose brown clay was 10 in. × 6 in. × 2½ in. It is likely, therefore, that bricks of different sizes were used for residential structures and soak-pits.

The second point worth notice regarding this soak-pit was that though the upper couple of courses were of rectangular bricks, the lower courses were of trapezium or wedge-shaped bricks measuring 10½ in. × 9½ in. × 6½ in. and 2½ in. in thickness. Eight courses of such bricks were found, below which the diameter of the soak-pit was found to have been indented or lessened. The total depth of the soak-pit was 13 ft. 4 in. and the number

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of courses was fifty-one. It is clear, therefore, that this soak-pit was raised by at least two or three occupants one after the other (*Fig. 35 b*).

Remains of the habitations of this phase were also exposed some hundred feet away to the west in The Sq. I. Besides flooring of hydraulic lime mortar were two soak-pits built of large terracotta rings which were placed one above the other. The builders had taken a pit to accommodate two such ringed soak-pits, and it was dug right into the silt thus disturbing all the earlier habitational deposits. The width of the pit containing these soak-pits was 6 ft. 6 in. and its depth nearly seventeen feet. The virgin silt itself was dug to a depth of 6 ft. 3 in.

These ringed soak-pits were in a pair close to each other, the gap between them widening towards the bottom. The eastern soak-pit had eleven intact and one broken rings placed one above the other with the rim on top. On the rim of the lower ring rested the base of the upper ring. The western soak-pit had eleven rings. Though alike in technique, the following points of difference were noteworthy (*Fig. 35 c*).

(*a*) The size of the rings of both these soak-pits was not uniform. Whereas the western soak-pit had rings of smaller diameter at the lower portions, the upper portions were fitted with rings of gradually wider diameters.

(*b*) in the case of the eastern soak-pit, the height of every ring was not uniform. The upper rings had more height than the lower ones.

(*c*) the diameters of the rings of the western ring well varied between 2 ft. 9 in. and 3 ft. 3 in. ; the height of the rings of the eastern soak-pit varied between 1 ft. 6 in. and 1 ft. 3 in.

(*d*) the rings of both these were, in lower depths, coated with a greenish moss due to constant contact with water.

(*e*) the sides and the space in between these two soak-pits was full of black clay.

(*f*) both these yielded burnt grains, Red Polished sherds and a lot of rubbish.

Within the dimensions of the Sq. I, it was not possible to ascertain the location of these in relation to the plan of the habitation as evidenced by patches of the flooring of hydraulic lime mortar.

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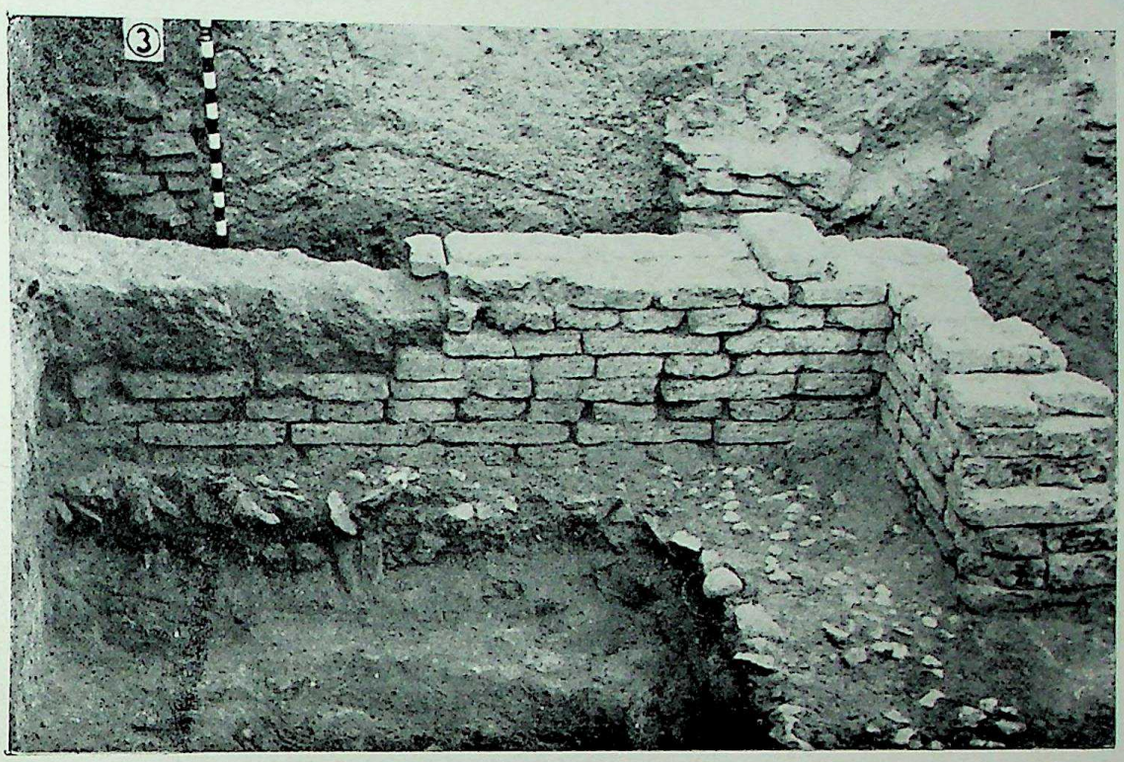

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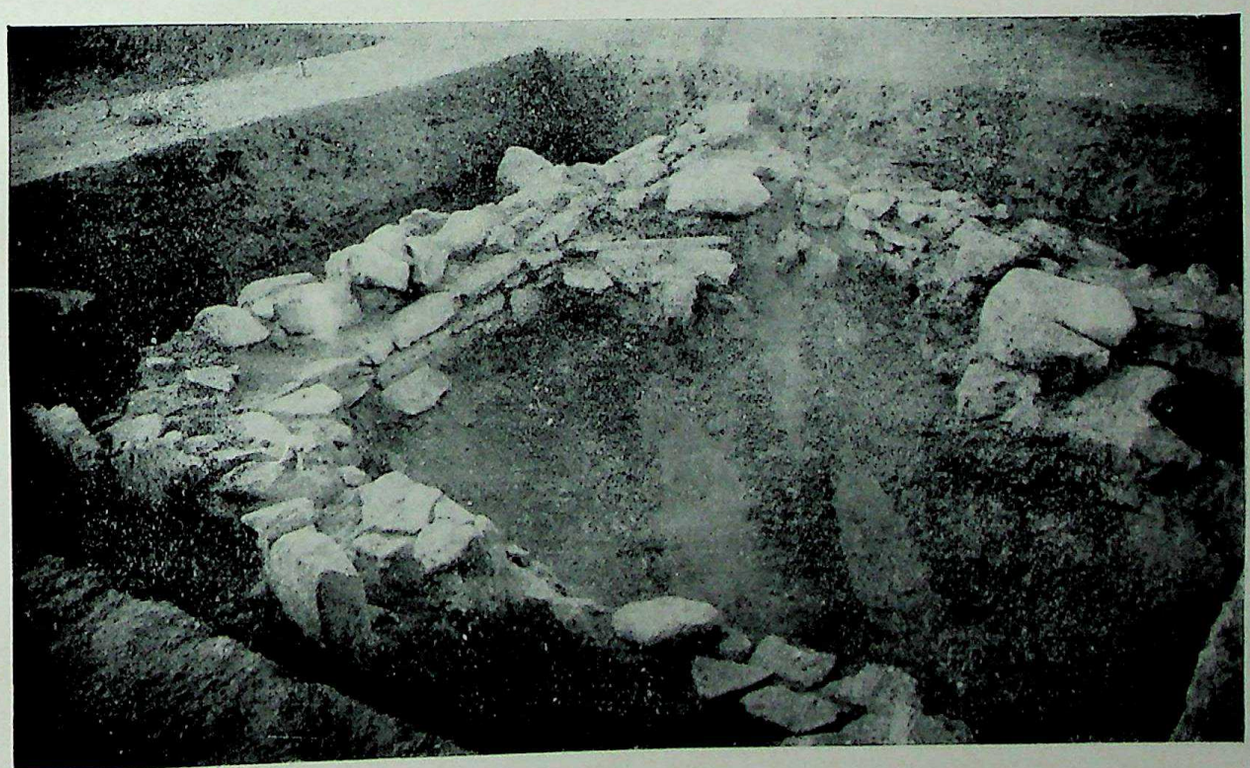

(*b*)

Fig. 34 : (*a*) *Close-up of brick-wall, Period V, Tr. F. (1955-56).* *See p. 54.*
(*b*) *Remains of the stone foundation of Period VI, Tr. A. (1954-55).* *See p. 63*

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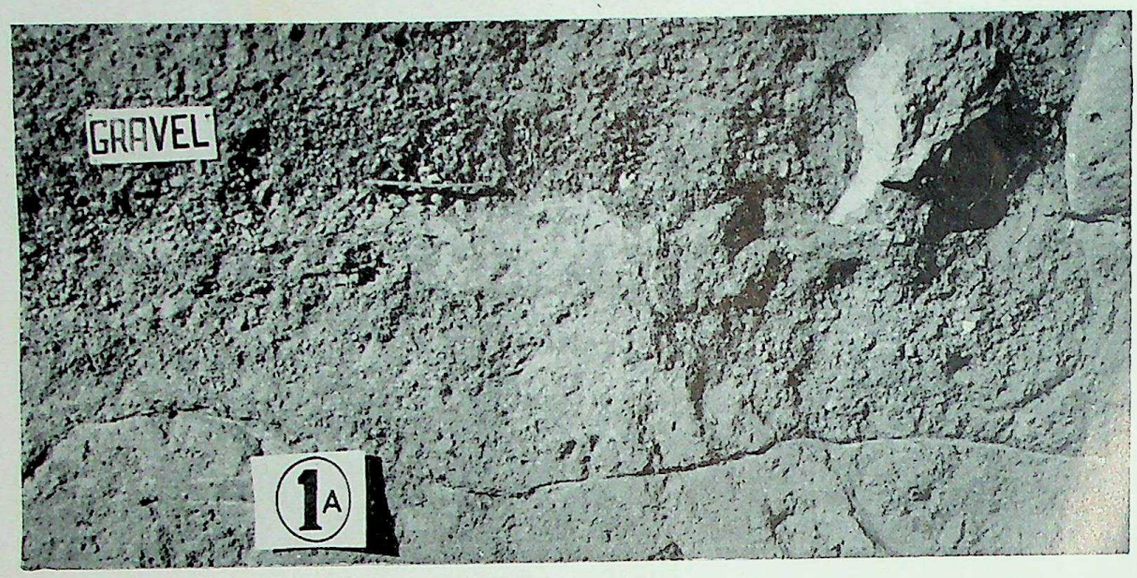
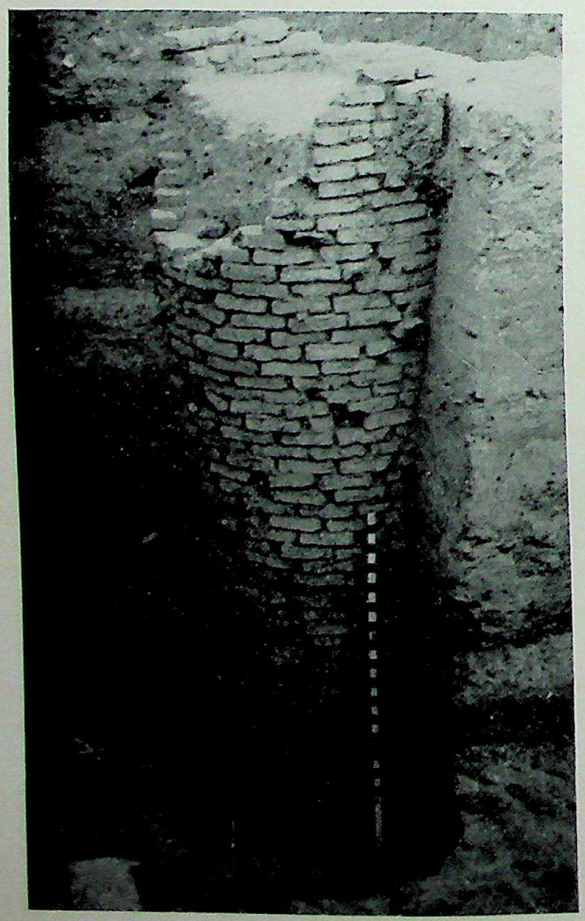


(*a*)

(*b*) (*c*)



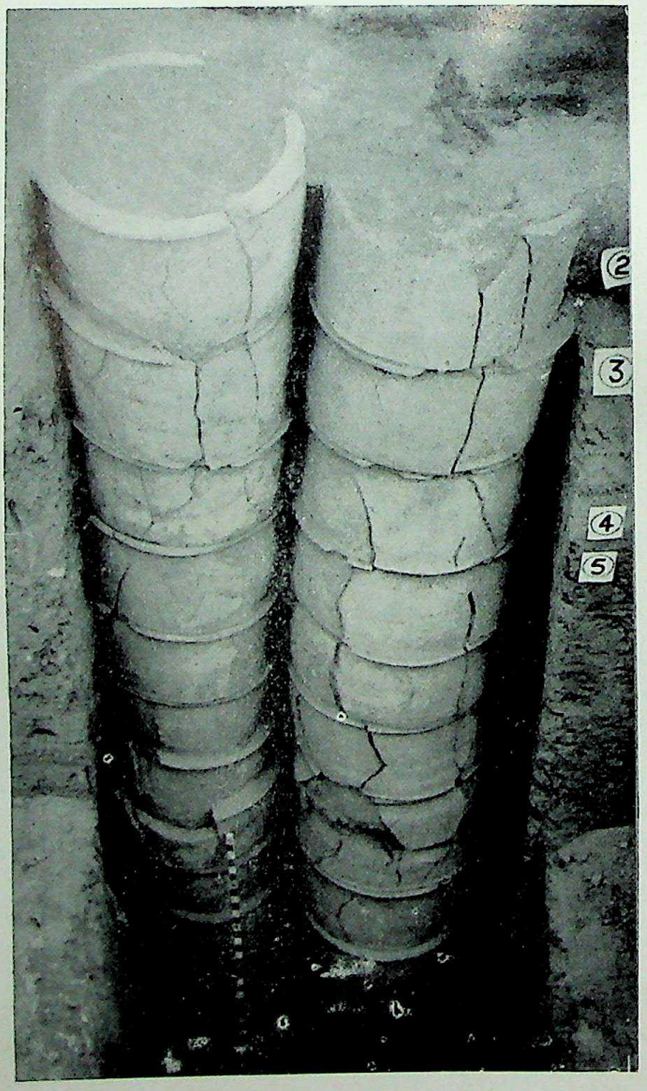


Fig. 35 : (*a*) *Gravel layer in Tr. B inside the structures of Period VI.* (*1954-55*). *See p. 64.*
(*b*) *Brick-lined soak-pit, Tr. H, Period IV.* (*1955-56*).
(*c*) *Ringed soak-pits, Tr. I, Period V.* (*1955-56*). } *See p. 58.*

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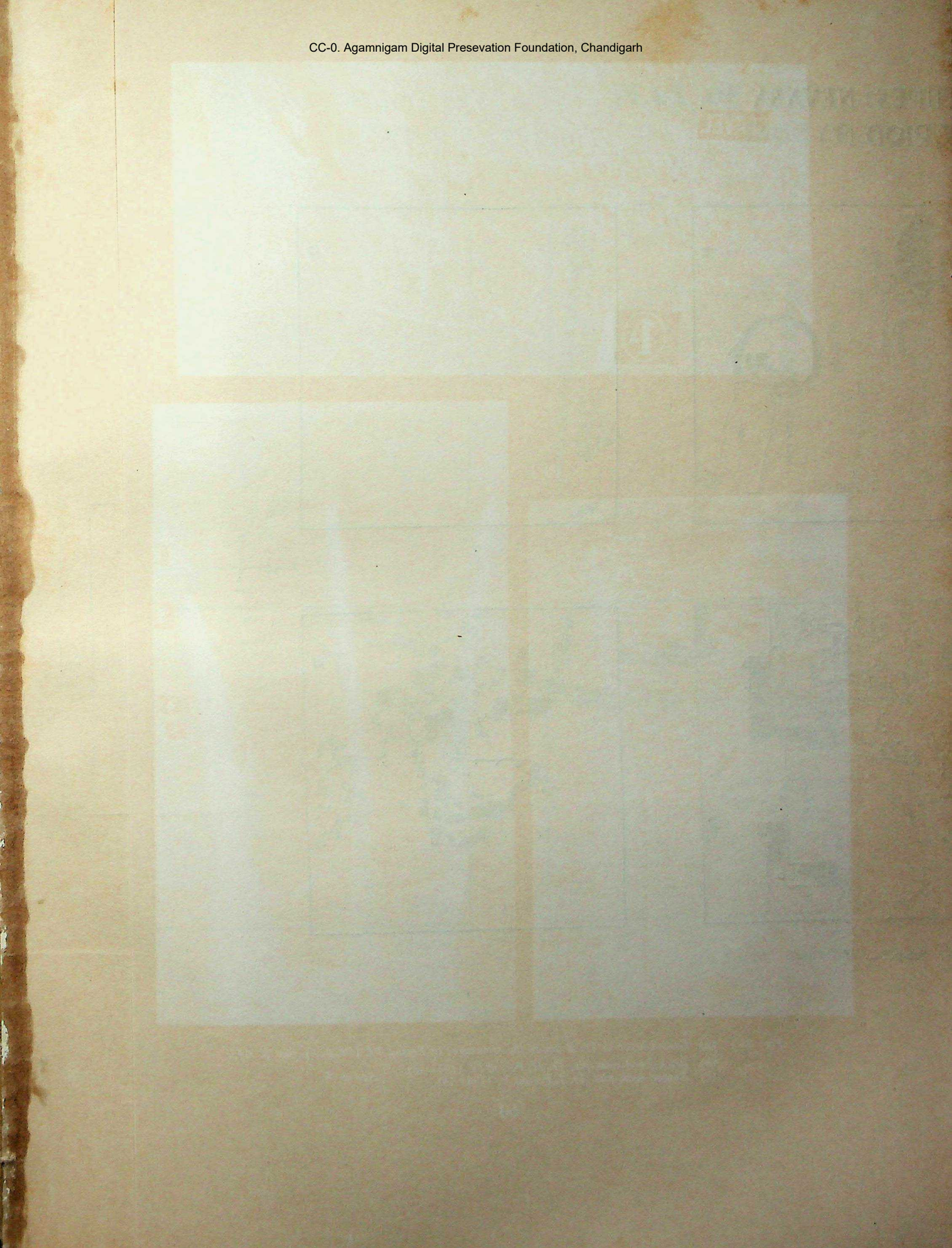

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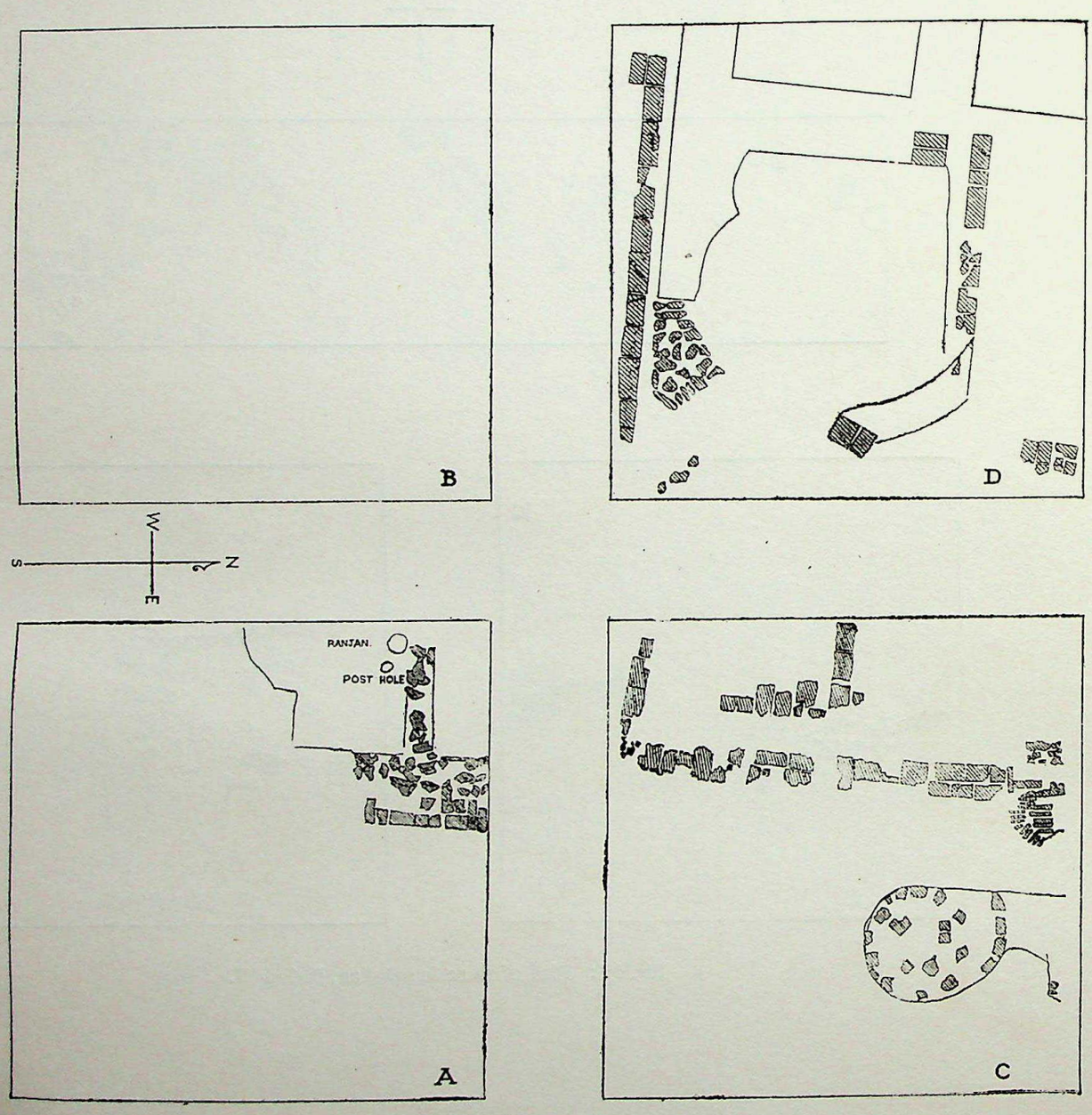

Fig. 36 : Plan of brick structu

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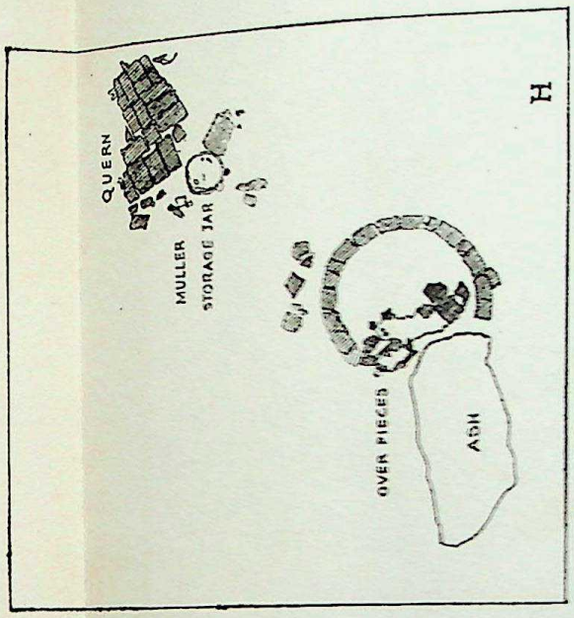
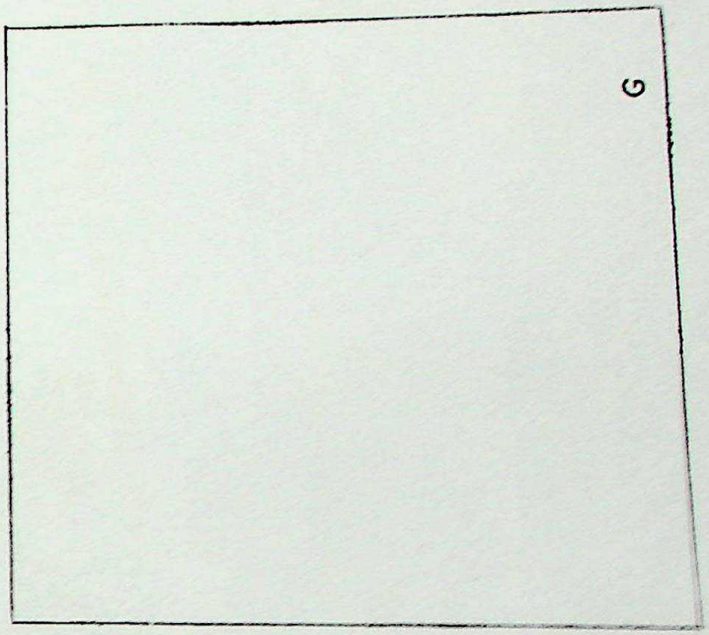
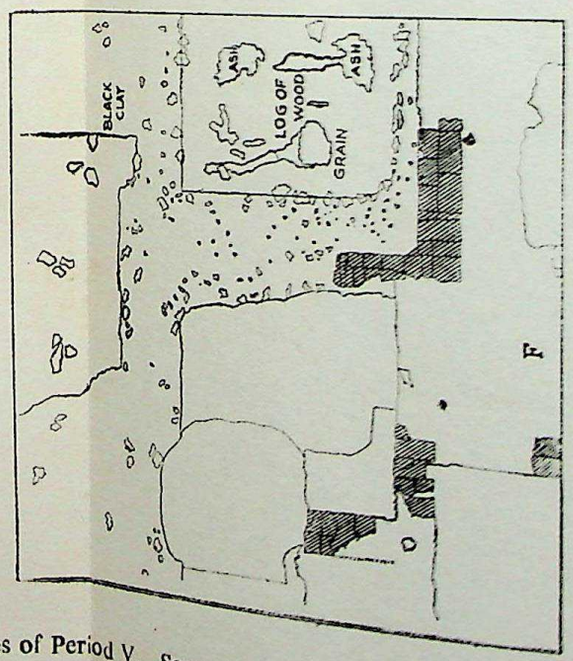
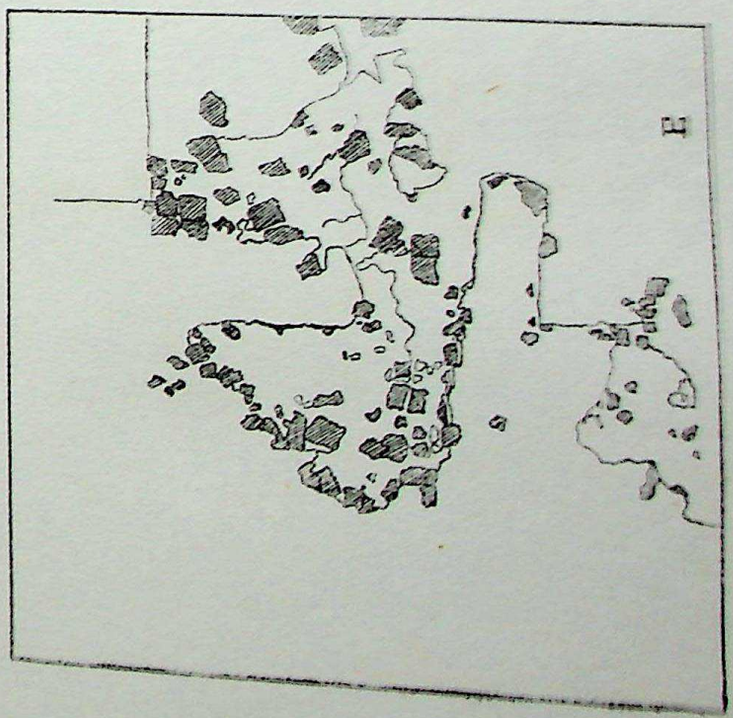
UCTURES: NEVASA
N PERIOD (V)









res of Period V. See p. 54.

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PLAN OF STONE-STRUCTURES: NEVASA MUSLIM PERIOD(VI)

Fig. 37 : Plan of stone foundation, Period VI.

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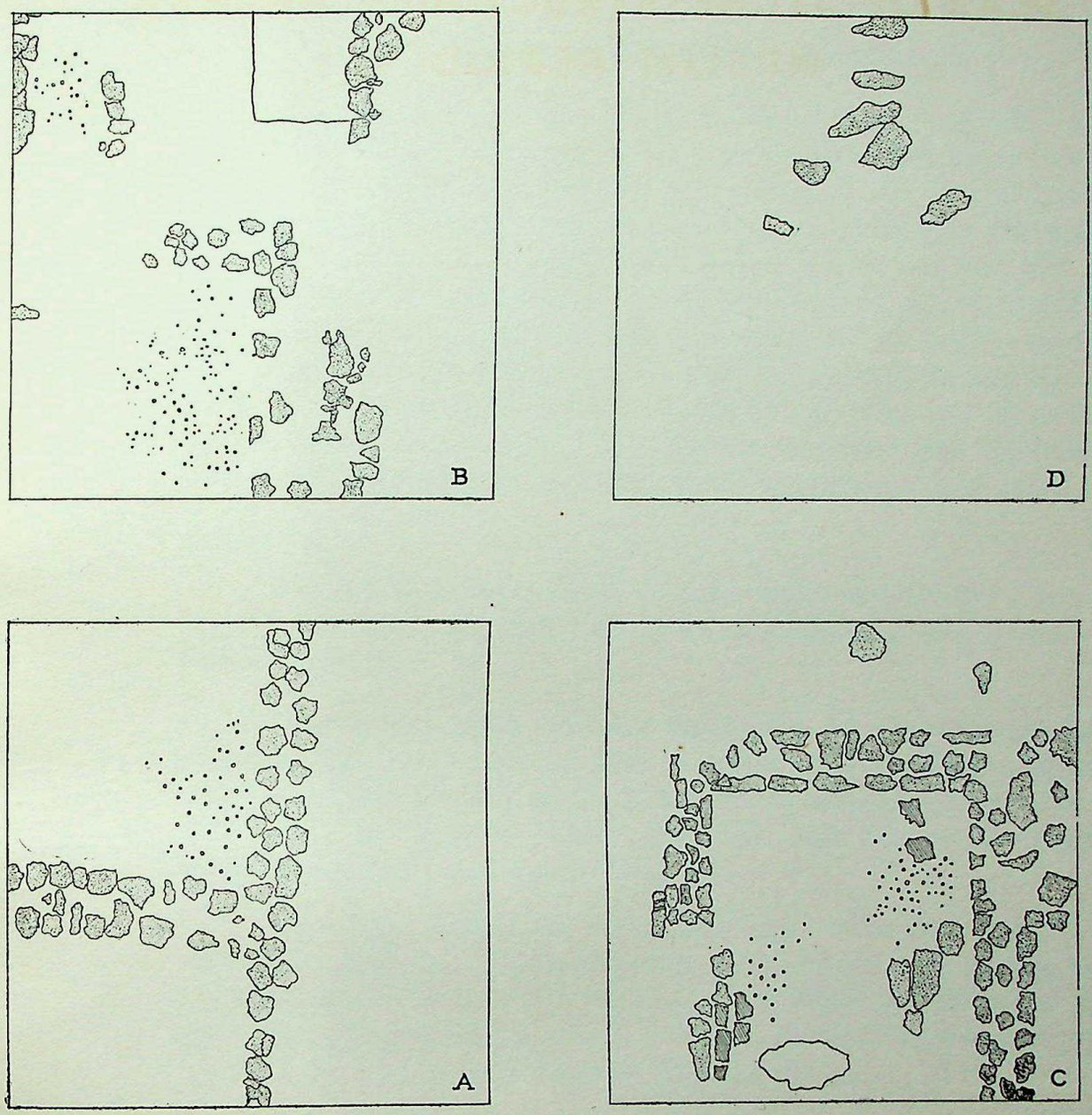

Fig. 37: Plan of stone foundation, Period VI. See p. 63

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The structures of this phase, besides having brick walls and soak-pits, had wooden posts to support the roof above. The brick wall revealed post-holes regularly at a distance of two and a half feet. It is also likely that these acted more as supports in the wall rather than to the roof. Several circular post-holes were sunk to a depth of nearly two feet. The diameter of these varied between four to six inches. However, due to a quick succession of habitations and floor-levels, the activity of sinking posts in the floors increased and they ultimately did not conform to any plan as such. However, a number of post-holes, scores of iron nails and tiles were found associated with this structure. It is certain therefore, that the houses were roofed with tiles fixed to the rafters below by means of such nails.

Period VI

The Ladmod area seems to have been uninhabited after the 3rd century A.D. upto the 14th century as no evidence to the contrary in any form is available.

That it was again occupied during the Muslim-Maratha period is evidenced by coins associated with extensive remains of stone foundations covering an area 95 ft. × 45 ft. of Md. I. No evidence of such foundation was found on Md. II, which indicated that the westernmost parts probably remained unoccupied (Fig. 37).

The stone foundation comprised huge undressed stones laid one above the other to a depth of nearly $3\frac{1}{2}$ ft. Along with stones, available brickbats and smaller stones were put as a filling in between so that the width ranged between 3 ft. and 1 ft. 11 ins. Brown clay was used wherever necessary as a cementing material. (*Fig. 34 b*).

No evidence of any standing wall was available. But it is certain that the loose brown debris contributing to the make up of the layers of this period must have been the result of fallen mud walls. Houses with similar stone foundation and mud walls are even now built in the Deccan.

The *plan* indicated the existence of at least four rooms of varying dimensions. Of these, two were independent and the third was partitioned into a double room.

The *rooms* were rectangular on plan and the dimensions of one room measured 10 ft. in N-S width and 15 ft. (extant) in E-W length. The openings seem to have been towards the west as indicated by the break.

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No evidence of any wooden frame was found but it may not be wrong to assume its existence. Similar is the case regarding the roof. It is likely that the roof was made of grass and clay.

The *passage* between the room mentioned above and others to the south was fifteen feet wide. The plan showed that the back wall of the rooms to the south was at least 35 ft. in length E-W, and had no access to the northern room. The partitioned room measured $22\frac{1}{2}$ ft. in total length and so partitioned in N-S direction that each room was about 10 ft. in width.

The rooms did not expose any remains of flooring. It is likely that it was at an higher level than these foundation stones and might have consisted of rammed earth. However, huge deposits of ash and burnt wood suggest that this area was probably a kitchen. In one of the rooms, adjacent to a log of burnt wood were found fragments of a quern and a muller and burnt wheat. These supplement the above surmise. The quern was placed on what appeared to be a brick platform, for apparently it needed a firm level floor.

Besides this kitchen, the other rooms yielded fragments of scores of polychrome glass bangles, small flat bowls for oil (*pantis*) and globular spouted pots. These rooms therefore might have been used as a workshop for a local cottage industry of bangle making.

That these houses were destroyed by a flood was evidenced by extensive patches of gravel (*Fig. 35 a*) inside these rooms as also into the crevices of stone foundation. These patches were numerous in the east. The flood waters thus attacked the habitations from the east.

The submerging of the Ladmod area during floods is recalled even in recent years. It seems to have recurred on a vast scale during the late medieval period as well.

III

CHRONOLOGY

The material from excavations and explorations in and around Nevasa has been grouped into six periods as follows :

Period I Early Palaeolithic (Middle Pleistocene) c. 1,50,000

Period II Middle Palaeolithic (Upper Pleistocene) c. 25,000

CONCORDANCE & CO-RELATION OF LAYERS, NVS

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	A	B	C	D	E	F	G	H	I	X	Y
PERIOD VI MUSLIM-MARATHA	1	1 G,C	1	1 G	1 G	1	1	1	1 G	1 R-P	1
	1a BR	1a BR	1a BR	1a BR	1a BR,G	1a BR	1a BR,∪	1a BR,G,∪			1a BR
PERIOD V INDO-ROMAN	2 BR,G	2 BR,	2 BR,∪	2 BR,	2 BR,	2 BR,∪	2 BR,	2 G,C,BR	2 BR,A, R-P	2 BR	2 BR,+
	3 BR,RP	3 BR	3 BR,A	3 BR,A	3 BR	3 BR	3 BR	3 BR			
	4 BR,A	4 BR,A,Δ	4 BR,A-C, R-P	4 BR,A,M	4 BR	4 BR	4 A,BR,A	4 BR			
	5 BR	5 BR		5 BR,A, R-P	5 BR	5 A,M,BR	5 A,M,BR	5 A,BR,+			
	6 BR,R,A, M,R				6 BR,R-P	6 BR,A,M,R-P	6 BR,R-P	6 BR			
					7 BR	7 BR,A,C ⊠		7 BR,A,R-P			
PERIOD IV EARLY HISTORIC	7 BR	6 BR	5 BR,A,M	6 BR	8 BR,0	8 BR,⊠	7 BR	8 BR,⊠	3 BR,⊠,0	3 BR,⊠,0	3 BR,N,0
	8 BR	7 BR	6 BR	7 BR	9 BR	9 BR	8 BR	9 BR	4 BR		4 BR,A,C,N
	9 BR	8 BR	7 BR	8 BR	10 BR		9 BR				
	10 BR	9 BR	8 BR		11 BR		10 BR				
			9 BR		12 BR,⊠						
WEATHERED HORIZON					13	10	11	10	5	4	5
PERIOD III CHALCOLITHIC	10a P	10 P	10 P	9 P	14 P	11 P	12 P	11 P	6 P	5 P	6 P
			11 P	10 P	15 P	12 P	13 P	12 P		6	
			12 P	11 P	16	13 P		13 P			

POTTERY

N = NBP G = GLAZED C = CELADON R = ROULETTED A = AMPHORA M = MEGARIAN A-C = ANDHRA CRISS-CROSS

BR = BLACK-AND-RED P = PAINTED POTTERY R-P = RED POLISHED WARE

COINS

0 = SĀDAVĀHANA 0 = PUNCH-MARKED ⊠ = SIRI SĀTAKANI + = LATE SĀTAVĀHANA Δ = BULLAE ∪ = MUSLIM

Fig. 84 : Chart of correlation of layers, Nevasa. See pp. 67-70.

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CHRONOLOGY

Period III Chalcolithic	c. 1,500 B.C.—1,000 B.C.
Period IV Early Historic	c. 150 B.C.— 50 B.C.
Period V Late Early Historic (Indo-Roman)	c. 50 B.C.— 200 A.D.
Period VI Medieval (Muslim-Maratha)	c. 1,400 A.D.—1,700 A.D.

The evidence is briefly as under.

Period I Cleavers and flakes in mint condition occur at Locality V in the cemented gravel resting on rock. This same layer at Locality I yielded a jaw fragment of *Bos namadicus*—a typical Middle Pleistocene fossil. This period is dated between 3,00,000 and 1,50,000 years.[1] So taking the lower limit, the tools and the associated fauna may be placed around 1,50,000.

Period II Various types of scrapers and points from the overlying comparatively loosely cemented gravel at Nevasa, but very firmly at Suregaon and Kalegaon on the Godavari. At the last mentioned site a complete skull of *Bos namadicus Falconer* was found embedded with the tools. This fossil is Middle Pleistocene, but the tools are stratigraphically and typologically later. So these are assigned roughly to about 25,000, taking again the lowermost limit.

Period III Real settled life is found for the first time in this period. It took place after a long dry spell as indicated by 15 to 20 feet deposit of yellow silt, on the top of the black soil which seems to represent its weathered horizon. The black soil is believed to be the result of a wet climatic phase, and consequent thick vegetation. If so, the new settlers must have been equipped to effect a clearing. The presence of a large number of blades along with heavy polished stone-axe, and a few even of copper at Jorwe, suggest that they did possess such an equipment. However, it is their pottery which is most characteristic. Wheel-made, of fine fabric, it has a metallic ring, and its surfaces which are generally matt red, are painted in black. The bowls are carinated, and others bear tubular spouts. The dead, mostly children,

1. The dating differs from region to region even in one country, depending upon the climatic, faunal, floral and other evidence. Here the one for Africa, to which the Indian stone industries bear great affinity, is tentatively adopted. See ZEUNER, Frederick E., *Dating the Past*, 1952, p. 298.

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were buried in urns. Objects of copper are so far few and comprise chisel, poker, bangles and beads. Owing to these features, and the total absence of iron and other objects of the historic period, Period III is called " Chalcolithic."[2]

Previously on the analogy of Nasik, Jorwe[3] and Brahmagiri,[4] it was assigned to a period between 15,00 to 1,000 to 5,00 B.C. Carbon-14 dates from Navdatoli and Nevasa itself help us in dating this period more precisely.

The clean charcoal sample from the topmost layer of the Chalcolithic (Tr. H, layer 11, depth 22 ft.) at Nevasa has been dated to 3106 ± 122, that is 984 B.C.—1228 B.C.[5]

This date may be taken still further back, because some seven feet of occupation debris marking earlier habitations lie below. And secondly at Navdatoli the Jorwe-Nevasa ware occurs for the first time in Period III.[6] Carbon-14 dates for the four samples from this period vary between 3503 ± 128 and 3449 ± 127. So the fact that the Nevasa sample is from the top layers of the Chalcolithic and the Jorwe Ware occurs at Navdatoli by 15,00 B.C. would suggest that we would be justified in dating the beginning of the Chalcolithic at Nevasa to c. 15,00 B.C. or its duration between 15,00 B.C.—1,000 B.C.

A Gap ?

Between this and Period IV a considerable gap seems to have intervened, during which the site was abandoned. Owing to various processes the top debris got weathered into a blackish layer like the virgin black soil. So far its contents are not chemically examined, but a clear ten to

2. Though some scholars prefer to regard this and other similar cultures as "Neolithic". See KRISHNASWAMI, V.D., in "Presidential Address", *Indian Science Congress Association, Proceedings of Forty-fifth Session*, Part II, p. 125, Delhi 1959, and GORDON, D.H., *The Prehistoric Background of Indian Culture*, p. 134. Sir Mortimer WHEELER, *Early India and Pakistan*, 1959, p. 138, is content to call it "Chalcolithic".

3. SANKALIA and DEO, *op. cit.* p. 28.

4. *A.I.*, No. 4 (1947).

5. Thanks are due to Miss Elizabeth K. RALPH of the C-14 Dating Laboratory of the University of Pennsylvania for these dates. See *American Journal of Science, Radio Carbon Supplement*, Vol. I, 1959, p. 52.

6. See *I.A.R.*, 1958-59, p. 31, and SANKALIA, H.D., in *Illustrated London News*, September 5, 1959, p. 182.

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eighteen inch thick band of blackish colour was clearly visible in all the excavated trenches, and contained mainly comminuted potsherds of the Chalcolithic phase.

Period IV The inhabitants of Period IV settled over this weathered layer, which formed for them, as it were, a virgin soil. Their life was basically different. Iron and minted money had come into general use. The painted pottery tradition was completely forgotten. Instead we have the (now) famous black-and-red ware, the coarse red, and a sprinkling of the NBP. This and the coins provide the principal evidence for dating the occupation.

The date of the NBP in the Deccan has been a matter for serious thought in recent years. Whereas it is dated to 5th-4th century B.C. in the north,[7] it will not be proper to assign it to exactly the same period in the region south of the Narmada as we have at several sites, as even at Nevasa, many degenerate copies of the original steel-blue variety. This is further supported by the association at Nevasa of Siri Sātāvahana coins which cannot be assigned to the founder of the dynasty, but may be tentatively put to 2nd-1st century B.C. Similar is the case of the so-called silver-plated punch-marked coin. At the most we can put it to late Mauryan period. On the basis of this evidence, it may not be incorrect to date the beginning of the habitations of Period IV to the first half of 2nd century B.C.

Period V The *terminus quo* of Period IV and the beginning of Period V is evidenced by the introduction of the Red Polished wares such as Megarian-like, the Rouletted ware, the amphorae, and the painted Andhra ware—all these being absent in the layers of Period IV. The Rouletted ware has been dated at Arikamedu[8] and Sisupalgarh[9] from about the 1st century-B.C. to the 1st-2nd century A.D. At Brahmagiri and Chandravali,[10] it has been assigned to a period from 1st to the 3rd century A.D. The amphorae have been put to about the 1st century B.C. at Taxila,[11] and c.1st century A.D.

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7. WHEELER, *op. cit.*, p. 31, gives a wider limit, viz. 5th-2nd cent. B.C.
8. *A.I.*, No. 2, p. 46.
9. *Op. cit.*, No. 5, p. 80.
10. *Op. cit.*, No. 4, p. 206.
11. *Op. cit.*, No. 10-11, p. 24.

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at Arikamedu.[12] The decorated Megarian-like also belongs to the same period.[13] The Andhra criss-cross painted from Nevasa, which is identical in design and fabric to those from Brahmagiri[14] may not be prior to the 1st century A.D. Associated with these ceramic industry are the late Satavahana coins of Gautamīputra and Yajña Sātakarṇi and the imitations of the Roman bullie. In the latter, particularly that which imitates the coins of the Roman emperor Augustus is helpful. On the basis of these, we may put Period V to c. 1st century B.C. to 2nd-3rd century A.D. C-14 date for charred grains from the soak-pit is 1846 ± 106 and thus is in full agreement with the above evidence.

After the couple of centuries of the Christian era upto the 13th-14th century A.D., the Ladmod area does not seem to have been inhabited. Whatever habitations came, belong to the Muslim-Maratha period as evidenced by the Tughlaq and Bahmani coins, polychrome bangles, glazed pottery and tiles and a coin of the Peshwa period. On the basis of these, Period VI may be dated to about the 14th to 18th century A.D.

IV

PERIOD I : EARLY PALAEOLITHIC

This period is very well attested at Nevasa. Unlike Maheshwar which also gives a similar sequence of cultures, but where the Chalcolithic mounds are a little away from the river, at Nevasa the mound containing the Chalcolithic and historic habitations stands over-looking the Pravara river; and the gravel and silt below can be compared with other tool-bearing localities at Nevasa and elsewhere in the region, so that a general picture of the palaeolithic industries and the corresponding climatic phases, and the associated fauna can be had.

It should be added here that since the first account,[1] the area was repeatedly examined. This has helped me in understanding the stratigraphy much better than before. The earlier views have, therefore, been modified in the light of this experience.

12. *Op. cit.*, No. 2, p. 41.
13. Information kindly supplied by Dr. WHEELER.
14. *A.I.*, No. 4, p. 202.

1. SANKALIA, H.D., "Animal Fossils and Palaeolithic Industries from the Pravara Basin at Nevasa, District Ahmadnagar", *A.I.*, No. 12, 1956, pp. 35-52.

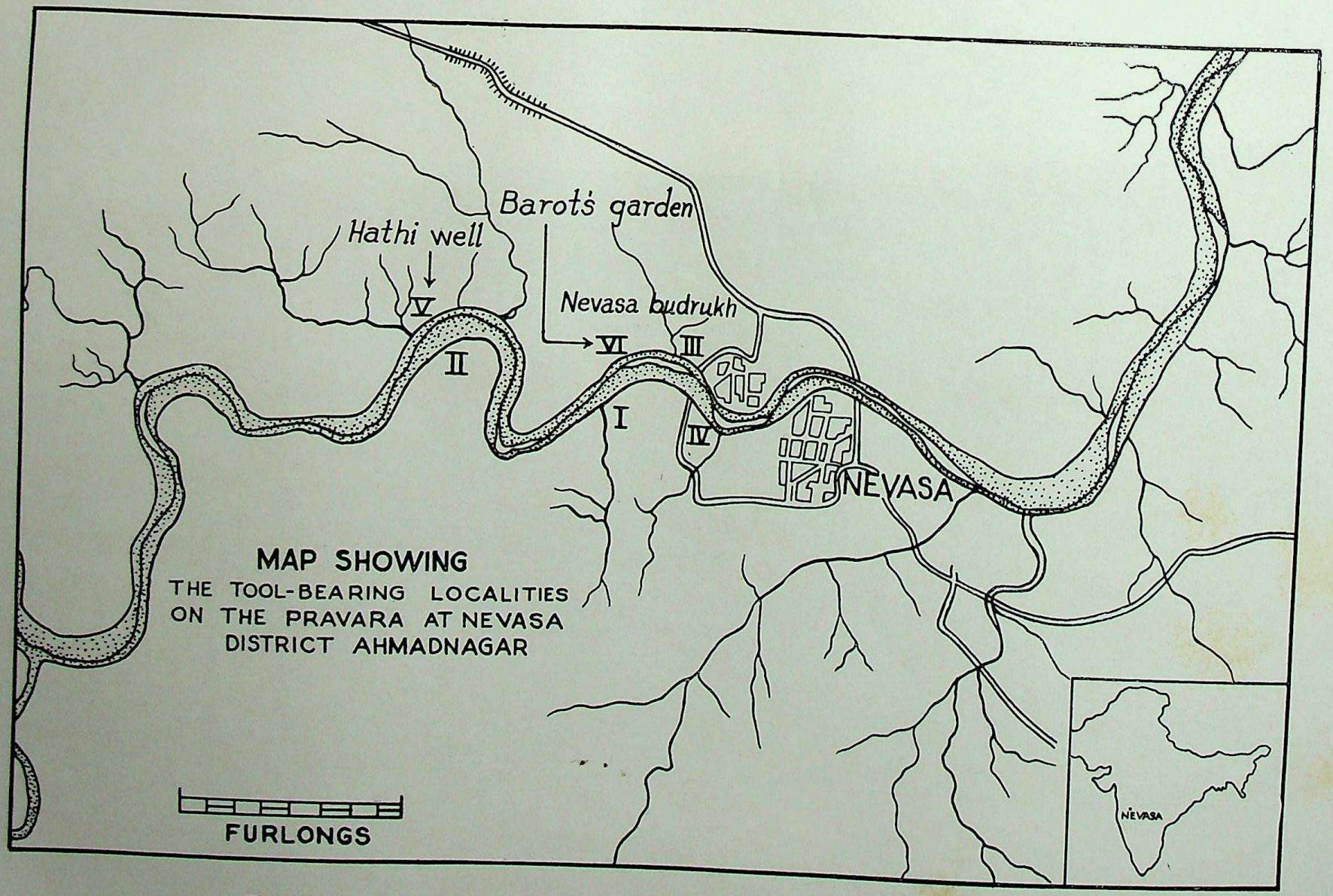

Fig. 38 : Map showing the tool-bearing localities on the Pravara at Nevasa. See pp. 75 and 102.

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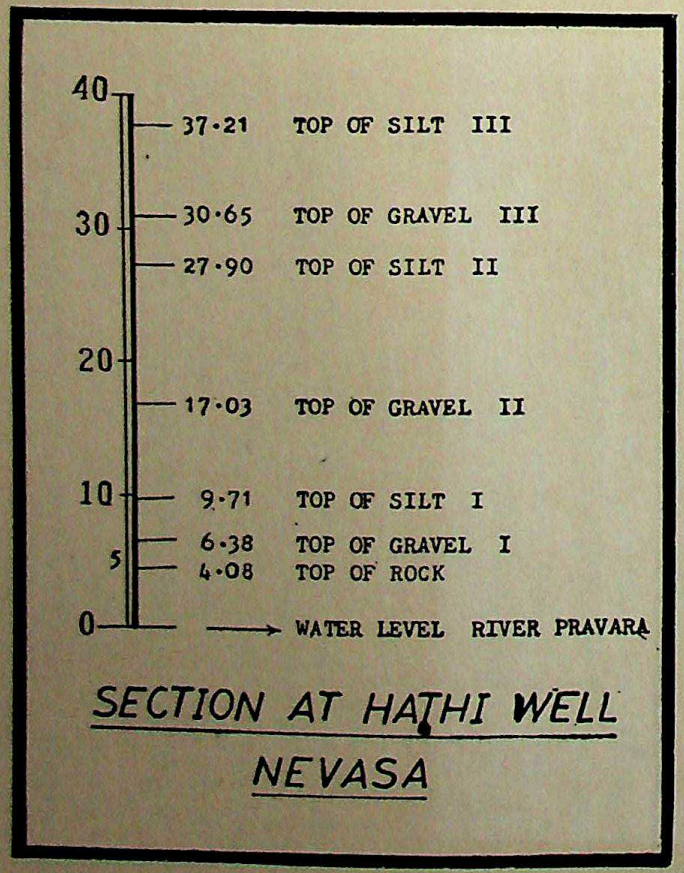
Fig. 39 : View of locality V. (Hathi well). See pp. 67,75,76



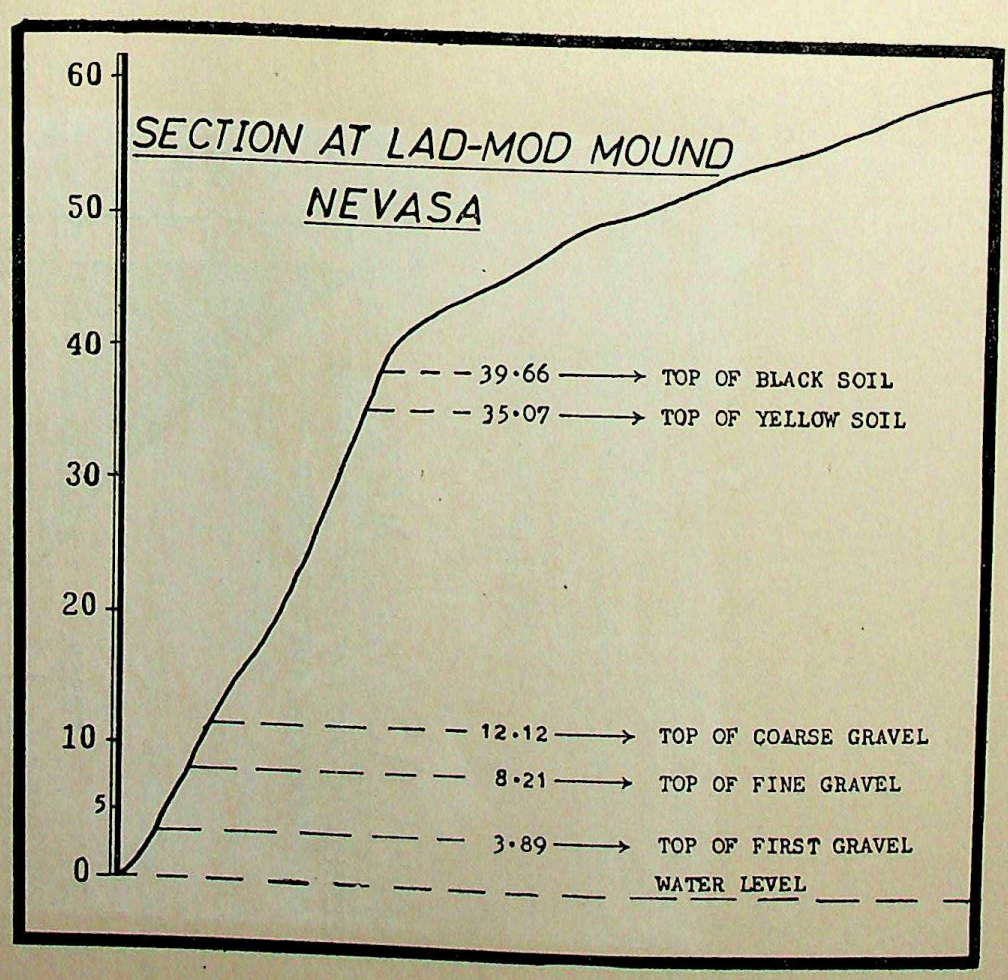


Fig. 40 : Section at Hathi well (Locality V) and Ladmod Mound, Nevasa. See. pp. 75 and 102.

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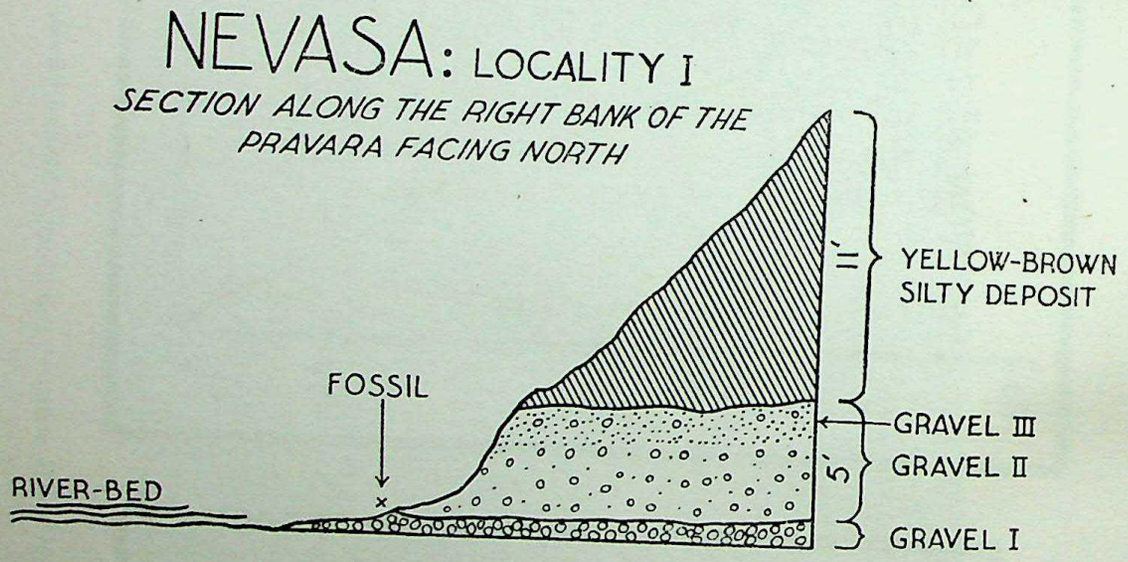

Fig. 41 : Section, Locality I. See pp. 75 and 102.

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PERIOD I—EARLY PALAEOLITHIC

Stratigraphy

Nowhere at Nevasa, or anywhere on the Pravara, or Suregaon, Bel Pandhari, Kalegaon (See Fig. 42) on the Godavari (to confine our attention to the two important rivers) in the Ahmadnagar District, distinct terraces could be seen,[2] as at Maheshwar. But there is no doubt that the deposits, (Figs. 40-41) wherever these are well preserved, as for instance at Localities I, IV and V (See Fig. 38) at Nevasa and at Akola, Bel Pandhari and Kalegaon indicate the following sequence (from bottom upwards).

8. Black soil (bottom of Chalcolithic).
7. Yellow or brown silt.
6. Fine gravel.
5. Yellow or fine silt, sometime dark or reddish brown.
4. Comparatively loose and small gravel with Series II tools and *Bos namadicus Falconer* at Kalegaon.
3. (Silt layer eroded).
2. Cemented gravel with Series I tools and *Bos namadicus* at Nevasa.
1. Rock.

Where the rock level is very high, as for instance, near the Barot's garden on the road to Hathi well (Nevasa budruk or the northern side of the Pravara) or at Suregaon, as we approach the village, all the layers tend to be very thin, or the silt layers are completely missing and the two gravel layers (Nos. 2 and 4) or the gravel and black soil (Nos. 4 and 8) are so mixed up, that tools of Series I and II or those of Series II only are found in the black-soil.

Climatic Phases

From this we may work out the climatic phases as follows : First a wet phase in the Middle Pleistocene period, followed by a dry phase. An erosional phase, as at present, when the silt (if at all, of the first dry phase) was eroded. A second wet phase followed by a dry phase, when the second thick deposit of gravel was laid down. This contained at Kalegaon a

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2. For a general idea of the geology, see *ibid.*, and p. 1 above. See however Appendix 5 on "The Terraces".

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complete skull with horns of *Bos namadicus Falconer* (*Fig. 43 b*). This is typical of the Middle Pleistocene, but might have survived. So we might regard this deposit as Upper Pleistocene. Possibly a third wet and dry phase preceded the formation of black soil *in situ*. Present conditions, when the river erodes the old deposits and redeposits them in the flood-plain. This has yielded a large number of Series II tools and animal fossils, all washed out from earlier deposits.

Nowhere the earliest gravel bed is thick, so that almost all the tools of this period were found loose or on the talus. A majority were found on the rock surface just below the earliest gravel bed at Locality V, suggesting that these (tools) probably belong to this stratum.

In all about 102 tools have been found during the course of last four years. This number is certainly not much, but considering the time devoted by us on this search and the restricted area, the number is not insignificant, particularly when it is remembered that the Maharashtra rivers have been unusually poor when compared with those of Karnatak or other regions.

Raw Material

The material in all cases is olivine dolerite, a fine grained variety of trap or basaltic rock. This occurs as dykes in the Deccan trap formation, which is believed to be Upper Cretaceous or Early Eocene. It must be noted that the tools all seem to be made from blocks from such a dyke, and not from pebbles. Most of the tools, whether rolled or fresh, have an olive green patina. Only a few show the dark grey colour of the stone.

The Tools

The tools fall into the following groups[3] :—

I. Handaxes
II. Cleavers
III. Flakes
IV. Cores
V. Hammerstones and/or Chopping tools
VI. Choppers or Side Scrapers
VII. Miscellaneous and Unique Forms.

3. Since the number of tools is small, percentages are not given.

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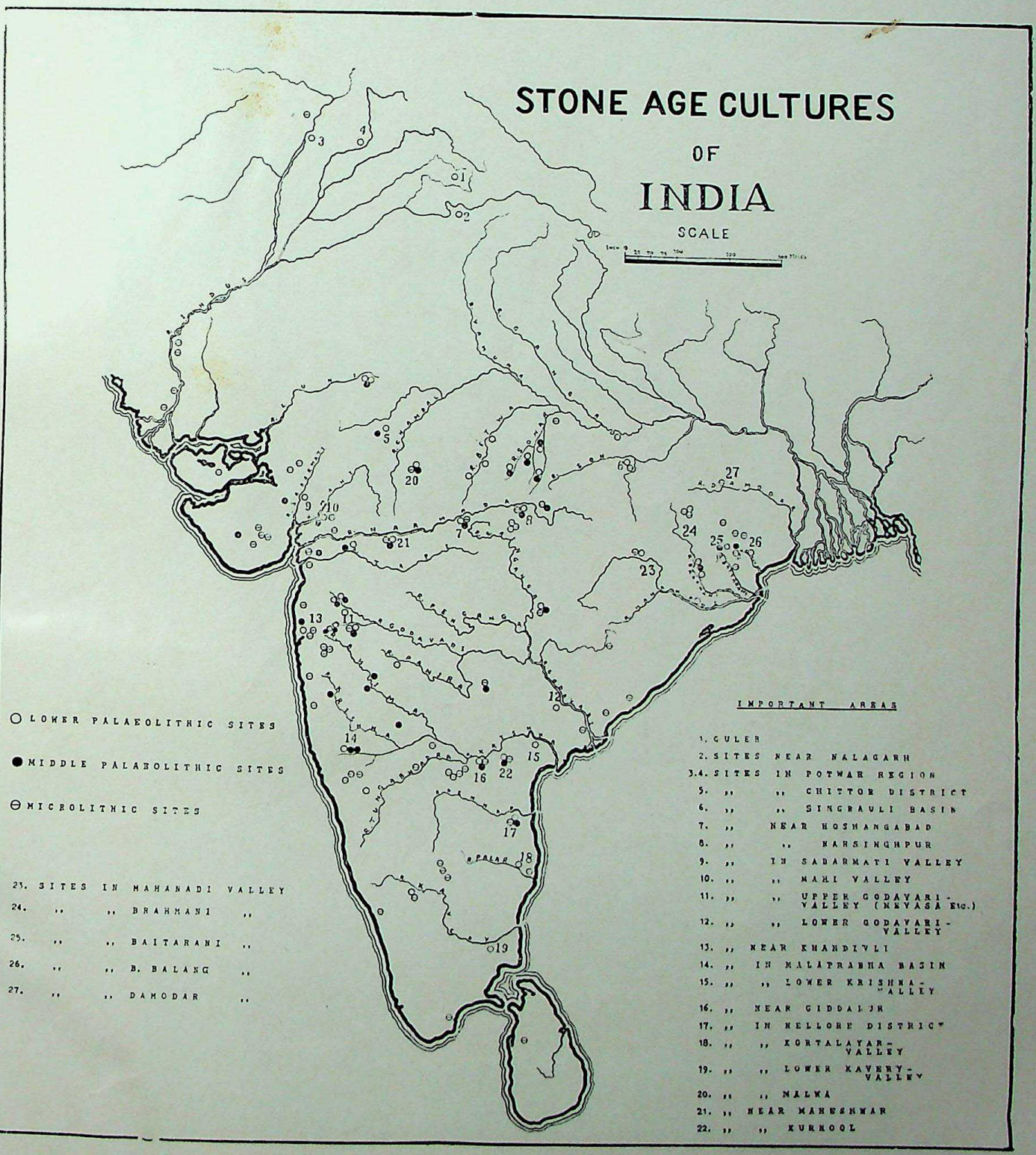

Fig. 42: Map showing the sites of various Stone Age Cultures in India.

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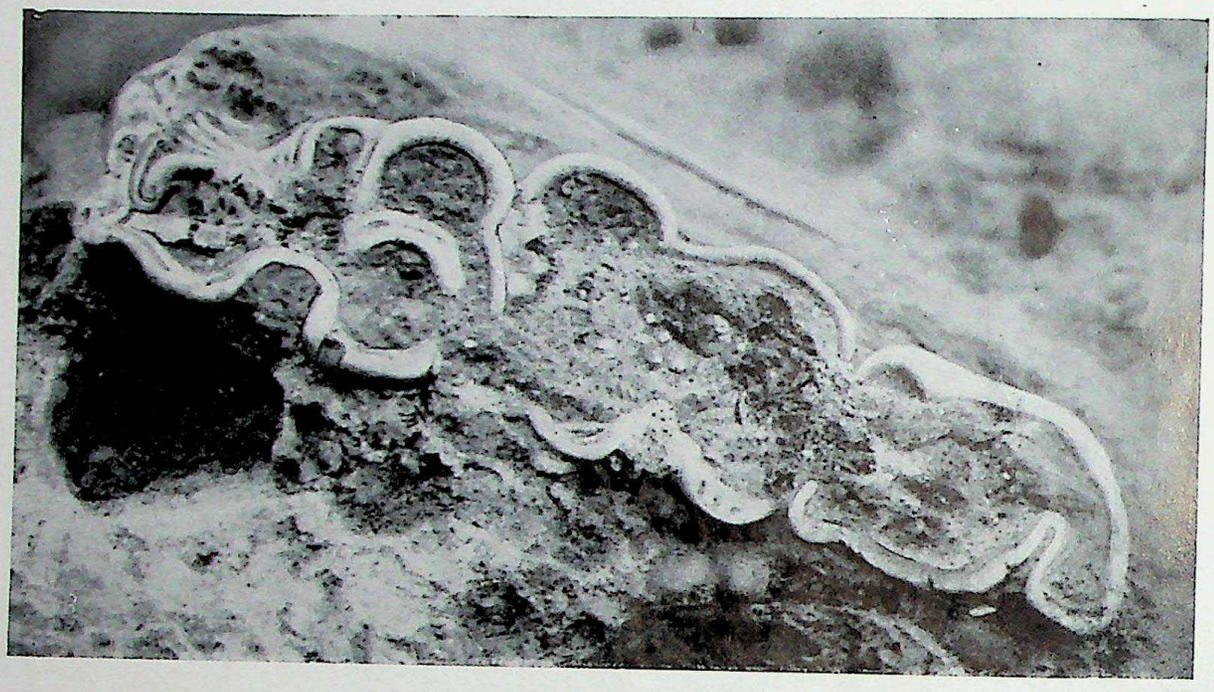

Fig. 43a. Jaw of Bos namadicus from Nevasa. See p. 75.

Fig. 43b. Skull (with horn) of Bos namadicus from Kalegaon. See pp. 75 and 102.

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Fig. 44: Pyriform Handaxe from Nevasa. See p. 81

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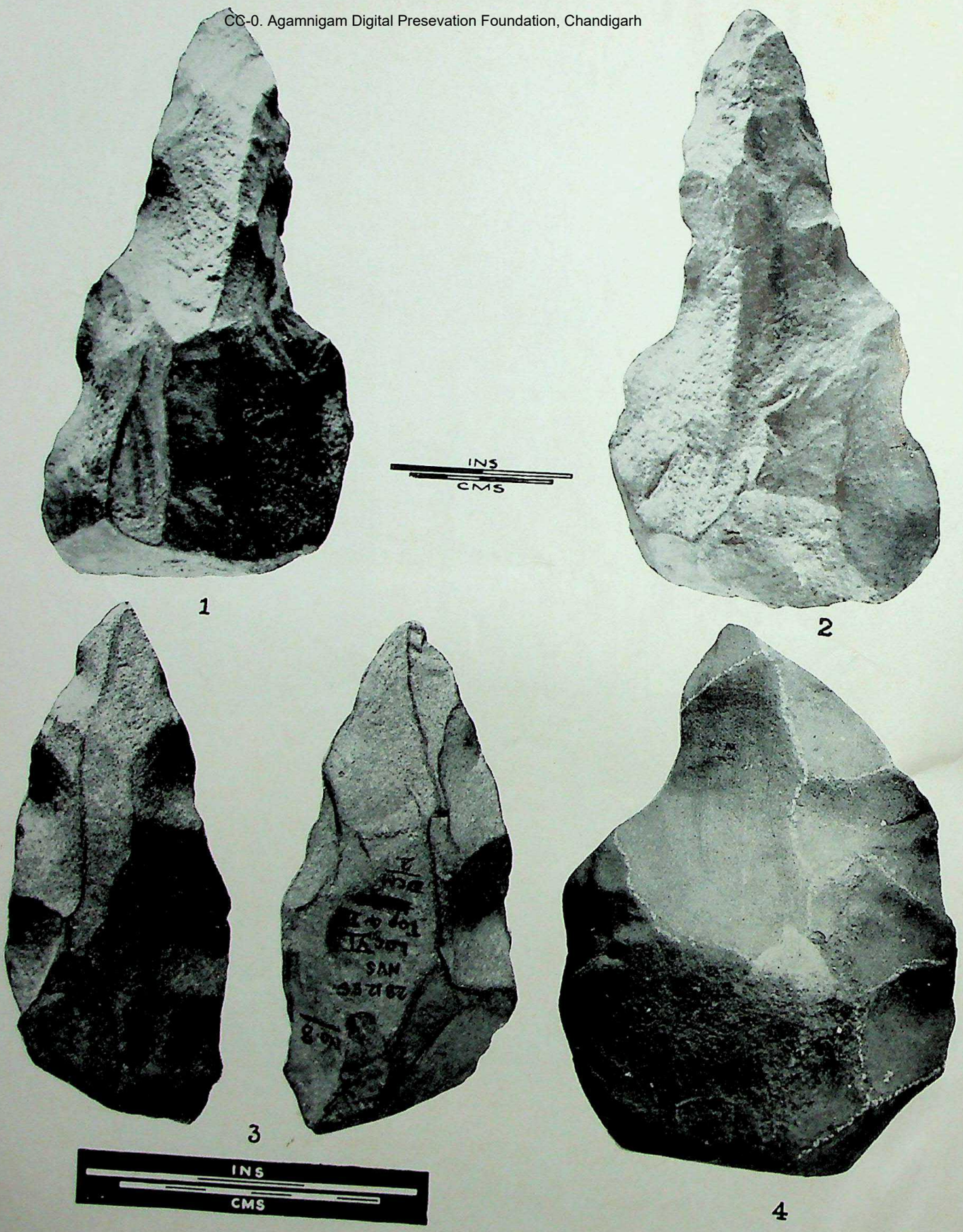

Fig. 45: Hand-axes 1-2 (5), 3 (8), 4 (4). See p. 82.

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Hand-axes

In the first collection there was only one true hand-axe. Since then eight more of this type were discovered. Including five others, there are 14 in all. These fall into two groups :

In the first group of nine, one was found in Locality II, the remaining eight in Locality VI. The first was found at the junction of Gravel II and overlying silt. The other eight were all found loose, but as mentioned above (p. 75). This is because the rock bench is very high at this point (road near BAROT's garden) and the river deposits consequently very thin. So it is possible to suggest that these belong to the last phase of the first gravel. This is also indicated by the fact that so far not a single hand-axe (barring a rostrocarinate No. 10) has been found in Locality V, where the first gravel is thinly preserved. So far this has yielded only cleavers *in situ* and cores and hammerstones or chopping tools.

Again the technique and general form of the hand-axes imply a relative closeness of time to each other. Of the nine, six are elongated pear-shaped and all made from a tabular block, so that either on the upper or the lower or on both, a flat cortexed surface is left. The same is true of the butt. The sides are marked by bold, deep, flake scars which have left a wavy, sinuous edge. Fine controlled flaking and very regular outline are seen only in one specimen, *viz.* No. 1. Thus on stylistic as well as stratigraphic ground, this group of hand-axes seems to belong to the late phase of the Hand-axe Culture at Nevasa.

The second group consists of highly rolled specimens. These are roughly heart-shaped, but the third has a protuberance on either side.

Detailed Description

I HAND-AXES

(*a*) *Elongated Pear-shaped*

No. 1 Pyriform or fish-like hand-axe, roughly biconvex, fully flaked on both sides by fine 'step' technique and subsequent retouch along the edge, leaving the central, flat, tabular patch of original cortex on either side; one surface or side quite fresh, as if in mint condition, and a half of the other which was exposed, weathered and with effaced flake-scars. *In Situ* at the junction of Gravel II and upper reddish silt. Size: 21.3 c.m. × 10.3 cm. × 4.2 cm. (*Fig. 44* and Fig. 50, 5).

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No. 9 Elongated, pear-shaped, roughly biconvex, flaked on the underside as well. Cortex on the surface and butt; tip of the tongue broken. Locality VI, surface. Size: 15.3 cm. × 8.7 cm. × 4.9 cm. (Fig. 50, 3).

No. 3 Similar to No. 9, (Fig. 50, 4) but more regularly flaked; the underside is one whole primary surface, as in Victoria West technique, only the side is slightly flaked, tip broken. Locality VI, surface. Size: 17.4 cm. × 10.0 cm. × 5.0 cm. (*Fig. 46* and Fig. 50, 1).

No. 5 Similar to No. 9 and 3 above, but has a median ridge on either side, so that the section is parallelogrammatic. Locality VI, surface. Size: 16.3 cm. × 8.6 cm. × 5.6. cm. (*Fig. 45*, 1-2 and Fig. 50, 6).

No. 8 A miniature variety of No. 5. Very sharp edge. Section roughly parallelogrammatic. Locality VI, surface. Size: 12.1 cm. × 5.4 cm. × 3.7 cm. (*Fig. 45*, 3 and Fig. 50, 4).

No. 4 Small, flat, pointed, pipal-leaf or heart-shaped. Only flaked along the margin on the upper side. Section biconvex. Locality VI. Size: 10.8 cm. × 7.5 cm. × 4.3 cm. (*Fig. 45*, 4 and Fig. 50, 2).

(*b*) *Heart-shaped*

No. 7 Rolled. Section: Quadrilateral. Size: 12.6 cm. × 9.6 cm. × 4.8 cm. (*Fig. 47*, 1 and Fig. 51, 1).

No. 6 Highly rolled. Size: 12.2 cm. × 7.4 cm. × 4.4 cm. (Not illustrated).

No. 2 Rolled, but a high protuberance near the butt on the upper side and almost in the centre on the under. Very irregular s-like wavy edge. Section roughly parallelogrammatic. Size: 12.2 cm. × 7.7 cm. × 6.3 cm. (Fig. 51, 2 and Fig. *47*, *2*).

(*c*) *Hand-axes on chalcedony pebbles*

All the three have been found *in situ* gravel which in Locality II and even V belongs to the second phase. This, no doubt, creates a problem. The explanation seems to be that either (i) these are not true hand-axes or (ii) that it (the form) is a survival of the old tradition in another material which was a favourite of the Middle Palaeolithic man. A fully flaked hand-axe in mottled jasper was found by Dr. KHATRI at Mandasor where both the series as well as veins of jasper and chert occur.[4]

No. 14 (55)[5] Pear-shaped hand-axe with a tongue-like thin tip formed by bifacial flaking, and a very thick pebble butt. Wavy, sharp edge, quadrilateral. There is a suggestion that this and the remaining two are cores. Greenish chalcedony. Locality II, Gravel II. Size: 11.3 cm. × 6.6 cm. × 5.3 cm. (Fig. 51, 3).

No. 13 Similar to above in shape, but a thick flake, with a pebble butt. Flake scars on the upper surface, the under a clean flat primary surface. Greenish, mottled chert. Locality II, Gravel II. Size: 8.9 cm. × 7.6 cm. × 4.4 cm. (Not illustrated).

4. KHATRI, A. P., *Stone Age Cultures of Malwa*, Ph.D. thesis in Archaeology, Poona University 1958. (Not published). Deccan College and Poona University Library.
5. All the tools have been re-numbered. The numbers in brackets are old.

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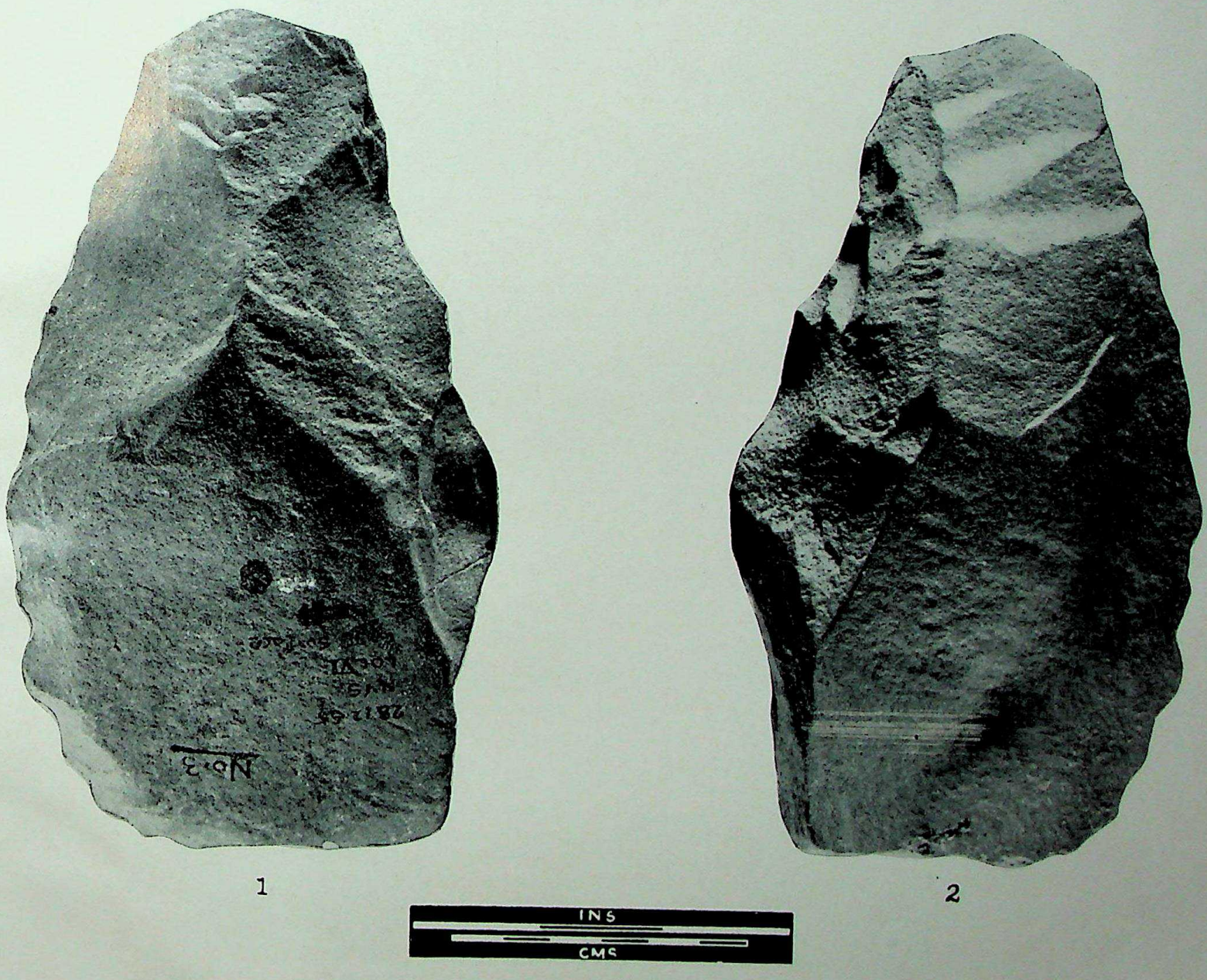

Fig. 46 : Hand-axe 1-2 (3). See p. 82.

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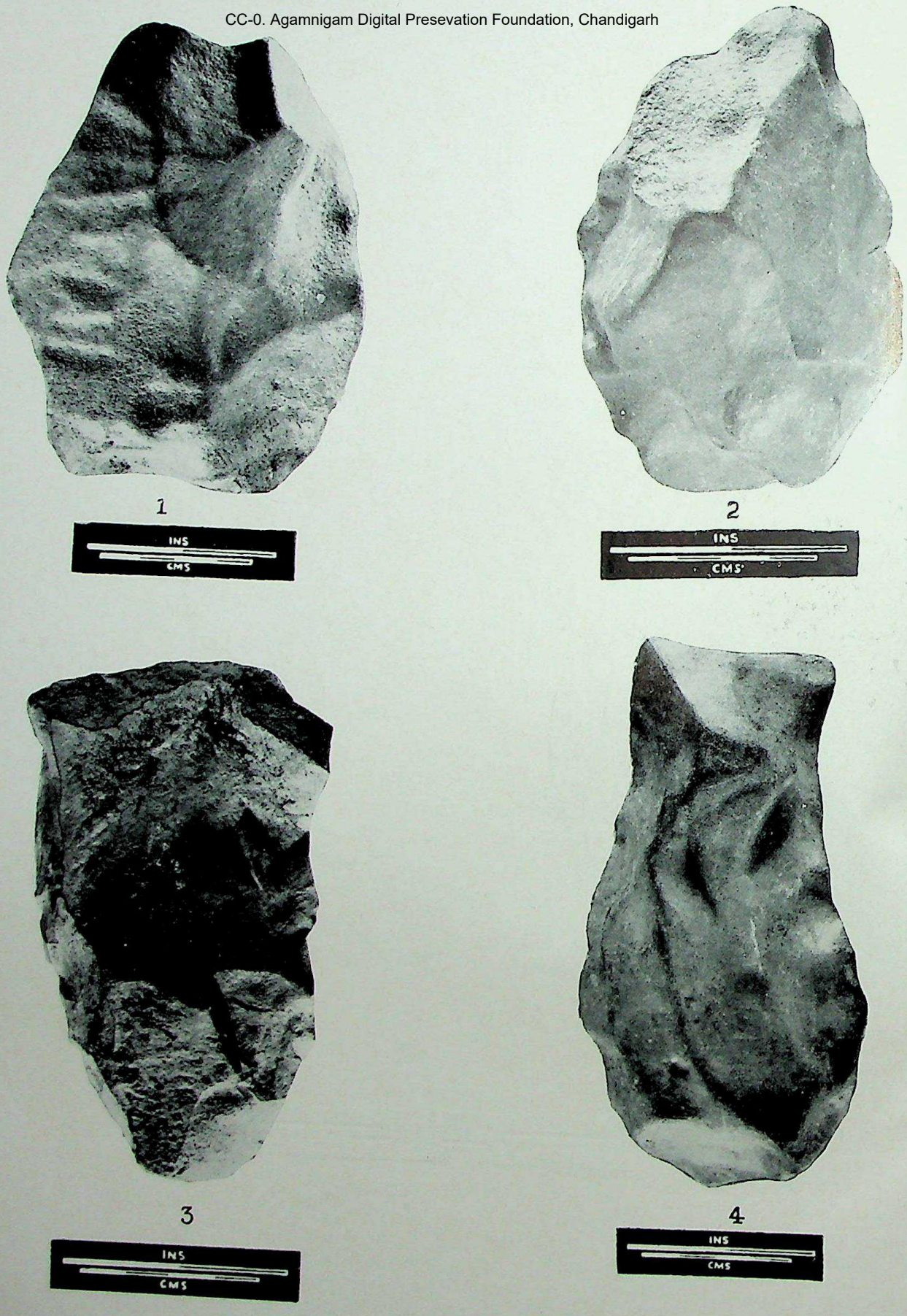

Fig. 47 : Hand-axes 1 (7), 2 (2); Cleavers 3 (20), 4 (23). *See pp. 82 and 86*

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No. 12 Pear-shaped pebble, slightly flaked on the upper side at the tip. The cut on the underside seems to be a natural break. Mottled chalcedony. Locality II, Gravel II, Size: 10.7 cm. × 7.4 cm. × 3.8 cm. (Not illustrated).

(*d*) *Rostrocarinate forms* (*Fig. 48*, 1-4; Fig. 51, 7). Both these have an almost identical shape and technique.

No. 10 Long, with a beak-like projection, thick butt, steep rising body having an uneven median ridge, slightly hollow undersurface, all as a result of bold flaking which has left large and deep scars, except on one side of the butt which has cortex; slightly rolled. Locality V, Gravel I (Surface of talus). Size: 15.3 cm. × 7.2 cm. × 7.3 cm. (*Fig. 48*, 1-2 and Fig. 51, 7).

No. 11 Similar to No. 10, but there is flat cortex surface all round the butt. One or two "step" scars on both sides of the edge, as if it was intended to use the tool as a steep-sided scraper. Almost fresh. Locality VI, Surface. Size: 14.4 cm × 7.8 cm. 5.3 cm. (*Fig. 48*, 3-4).

II CLEAVERS (Figs. 52-53 and *Fig. 47*)

The small collection has given us the following types of cleavers :

(*a*) Cleaver, short, with straight edge, and broad U-shaped butt.

(*b*) Cleaver, long, with straight edge, and narrow or pointed butt.

(*c*) Cleaver, with sub-triangular front, and straight-sided butt.

(*d*) Cleaver, with sub-triangular front, and oblique-sided butt.

(*e*) Cleaver, with oblique edge, and pointed or straight butt.

In addition to these with well-marked features of classical cleavers, there are three flakes which are technically made like a cleaver, but have the edge on the longer side, and have not got a thick body.

Detailed Description

(*a*) *Cleavers, with straight edge and thick U-shaped butt*

No. 16 (29) Both the under and upper surfaces show primary flake surfaces more than half their length, but towards the thickening butt, there are flake scars on both sides, either for hand-hold or for hafting. The sides bear marks of step flaking. Back of butt has cortex. Section parallelogrammatic. Locality V; river bed. Size: 10.2 cm. × 7.2 cm. × 3.4 cm. (Fig. 52, 1).

No. 18 The upper surface very steep, thick and uneven at the butt, because of bad flaking, sides also similar, underside primary flake surface. Slightly weathered dirty brown. Locality VI, surface. Size: 13.3 cm. × 10.5 cm. × 5.3 cm.

No. 19 Smaller and squatter than the previous two, very steep upper surface ending in a point at the butt, the back of which as well as the two sides and a part of the undersurface show deep scars. Locality VI, surface. Size: 9.6 cm. × 7.8 cm. × 4.8 cm.

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No. 17 Smaller, rolled, uneven upper surface. Locality VI, top of Gravel II. Size: 10.1 cm. × 7.7 cm. × 3.4 cm.

No. 21 Long cleaver-cum-hand-axe, very much rolled, but the point is unmistaken. Otherwise similar to No. 23. Locality V. Gravel I, surface. Size: 15.2 cm. × 6.9 cm. × 4.1 cm.

No. 24 Long cleaver with V-shaped butt, broad edge with tapering surfaces, sides not much flaked. Very much rolled and weathered, so that the trap is peeling off at the butt. Size: 13.9 cm. × 9.1 cm. × 4.7 cm.

(*b*) *Cleavers, long, with straight edge and narrow or pointed butt*

No. 20 Cleaver in mint condition, upper side bears deep "step" and other flake scars, underside also partly flaked on the one side; butt narrow, having cortex. Edge very sharp. Olive green. Locality V. Top of Gravel I. Size: 12.0 cm. × 7.1 cm. × 3.2 cm. (Fig. 52, 3-4 and *Fig. 47, 3*).

No. 23 (27) Longer than the preceding and slightly rolled, but otherwise technologically similar, and with one difference that the butt end is also flaked from both sides, so as to give a rough point. So it was called "cleaver-cum-hand-axe". Locality I. *In situ.*[6] Gravel I. Size: 15.1 cm. × 7.9 cm. × 3.2 cm. (*Fig. 47*, 4 and Fig. 52, 6-7).

No. 91 Smaller, than No. 23, and having narrower edge, but otherwise identical. Rolled and patinated. Locality VI. Surface. Size: 13.0 cm. × 6.7 cm. × 3.5 cm.

No. 22 Smaller and not extensively flaked as No. 23, so that a band of cortex is left from the butt to the edge; underside partially chipped, but in such a way as to give a point at the butt. Slightly rolled. Locality VI, Surface. Size: 12.2 cm. × 6.2 cm. × 3.9 cm. (Fig. 52, 5).

(*c*) *Cleavers, with straight or U-like butt and sub-triangular front*

This is rather an unusual tool type, not exactly like the classical cleaver.

No. 15 (19) Small thick flake, flat butt at end, partly unflaked platform, one of the longer sides partly flaked from the upper, the other from the under. Both meet in a thick sided point. Slightly rolled. Locality V. River Bed. Size: 10.2 cm. × 6.6 cm. × 3.1 cm. (Fig. 53, 1).

No. 27 This is definitely a cleaver on a side flake. It looks like No. 15, if held absolutely vertically. But slightly turned to the left, the small cleaver edge becomes clear. However, this has, unlike ordinary cleavers thin scraper edges to the right and left; the butt is also flaked from the underside, giving a wavy edge. In effect then this tool is a cleaver-cum-scraper. Slightly rolled. Locality V. River bed. Size: 11.6 cm. × 6.8 cm. × 3.0 cm. (Fig. 53, 2).

No. 29 Cleaver in mint condition, but not fully finished. Clean undersurface, one side bearing step scars. Locality V. *In situ* Gravel I. Size: 10.2 cm. × 7.0 cm. × 3.4 cm.

No. 28 Small flake-like cleaver, but two of its sides are thick and flaked. The upper surface has three steps, the topmost at the butt is unflaked; clean undersurface with a low butt on one side. Slightly rolled, underside patinated. Locality V. *In situ* Gravel I. Size: 8.8 cm. × 7.0 cm. × 2.6 cm. (Fig. 52, 2).

6. In *A. I.*, No. 12, p. 42, the locality is erroneously given as V.

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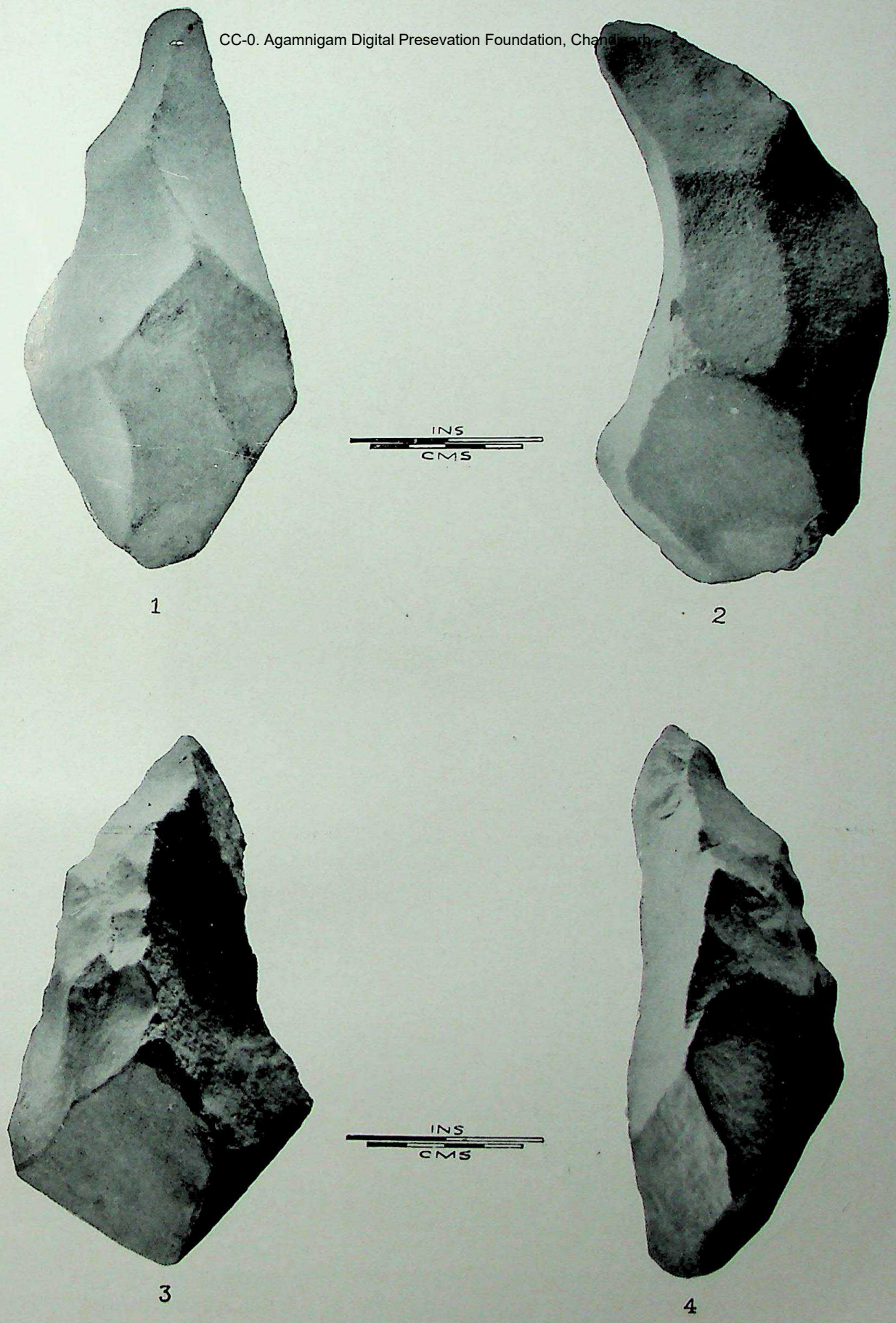

Fig. 48 : Rostrocarinate forms No. 1-2 (10), 3-4 (11). See p. 85.

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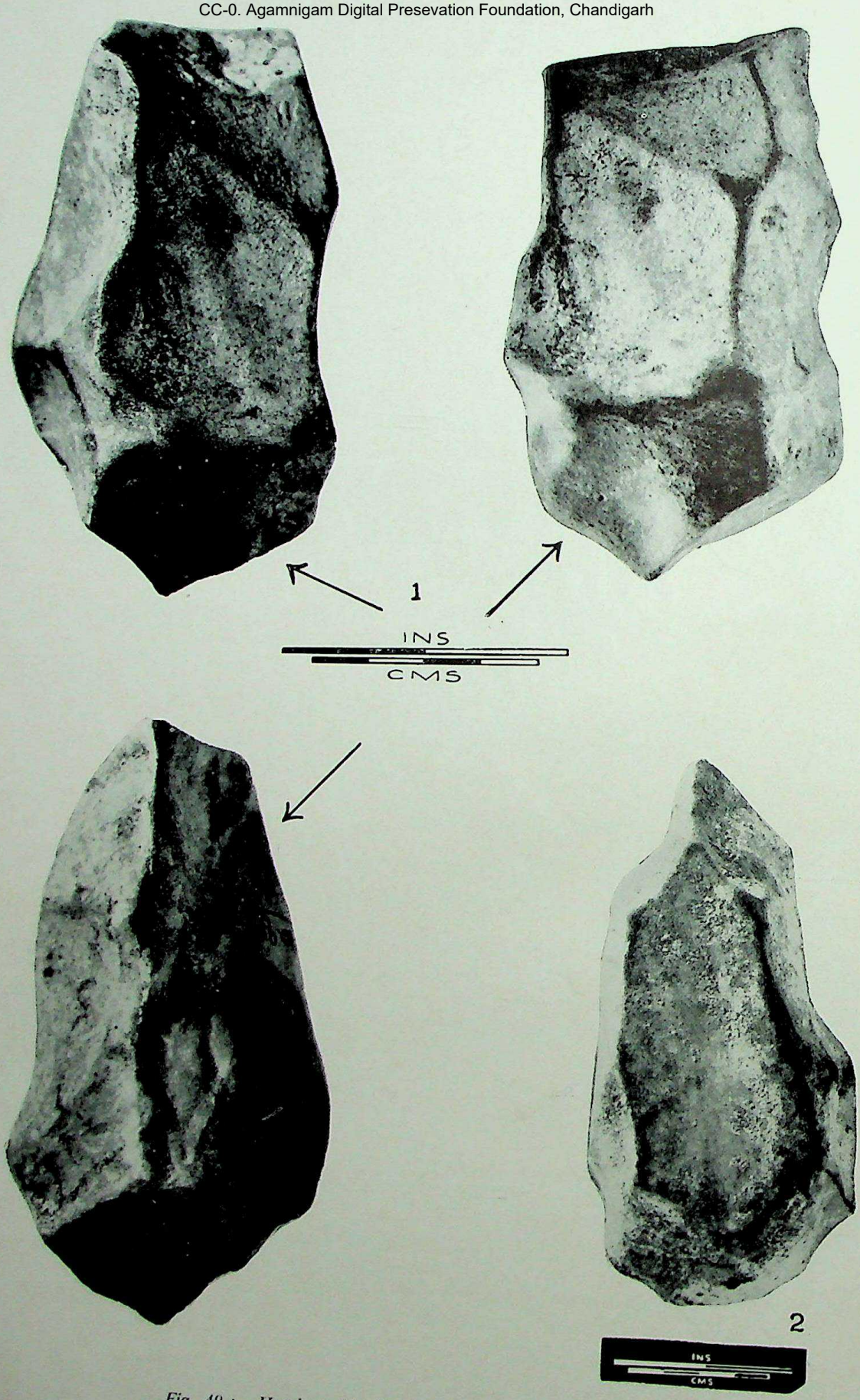

Fig. 49 : Hand-axe-like forms 1 (98), 2 (95). *See p. 101.*

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(*d*) *Cleaver with pointed or straight butt and oblique edge*

No. 25 (10) Cleaver on side flake, with oblique edge, bearing signs of use. The long side opposite to the butt has one or two small step scars. Slightly rolled. Locality V, River bed. Size: 12.6 cm. × 7.3 cm. × 3.4 cm. (Fig. 53, 3).

No. 30 (7) This is possibly exactly like No. 25, or like type (*b*). But cannot be said for certain, as the bottom or the edge portion is broken. Cleaver on side flake, marked by deep and steep flake scars on the right side top, as well as the left side under, including the butt, which is pointed. Fresh. Locality V. *In situ.* Gravel I, resting on rock.

(ii) *Cleaver flakes or small Side Choppers* (Fig. 53)

All these—about 5 in number, including the one from the excavation, No. 33 with smooth glossy black surface—are on a side flake having the bulb at one corner on the underside. The latter is the primary flaked surface. Thick at the butt and/or two sides which may be partly flaked for a hand-hold, leaving a longer side gently sloping to form a thin sharp edge.

No. 32 (29) Almost fresh. Locality I. Top of gravel, as No 25 above, but west of fossil jaw. Size: 9.8 cm. × 6.9 cm. × 3.2 cm. (Fig. 53, 7-8).

No. 26 Slightly rolled. Butt at end and not on the side. Locality VII. Surface. Size: 12.7 cm. × 7.8 cm. × 2.6 cm. (Fig. 53, 4).

No. 34 Moderately rolled. Locality I. Surface. Size: 9.2 cm. × 7.0 cm. × 2.7 cm.

No. 33 Rolled and lustrous owing to weathering. Thick, prepared platform. From excavation of the platform. Size: 11.5 cm. × 9.6 cm. × 4.5 cm. (Fig. 53, 5-6).

No. 31 More like a classical cleaver. Fresh. Locality V. *In situ.* Gravel I, on rock. Size: 10.7 cm. × 6.4 cm. × 3.4 cm. (Fig. 54, 1).

III FLAKES (Fig. 54)

The flakes, as indicated in the list, fall into two main groups :

(*a*) Flakes without bulb.

(*b*) Flakes with bulb.

(*a*) *Flakes without bulb:* These would have been dismissed after a reference, but six out of eight were found well embedded in the lower gravel. Secondly, although having a clean flat surface, their steep sides are flaked by bold and even at times by " step " technique. And it appears that these are unfinished (i) Unifacial hand-axes, and (ii) Cleavers.

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(i) *Unifacial hand-axes on flakes*

No. 39 Fresh. Locality V. Gravel I. *In situ.* Size: 10.2 cm. × 6.5 cm. × 3.3 cm.

No. 41 Fresh. Locality V. Gravel I. *In situ.* Size: 11.4 cm. × 6.0 cm. × 4.0 cm.

No. 43 Fresh. Locality V. Gravel I. *In situ.* Size: 14.2 cm. × 7.0 cm. × 3.6 cm. (Fig. 56, 2).

(ii) *Cleavers 'unfinished'*

No. 38 Fresh. Locality V. Gravel I. *In situ.* Size: 9.9 cm. × 5.7 cm. × 4.5 cm.

No. 42 (15) Fresh. Locality V. Gravel I. *In situ.* Size: 8.2 cm. × 3.3 cm. × 1.6 cm.

No. 40 Signs of use or retouch (?) on the short edge. Fresh. Locality V. *In situ.* Gravel I. Size: 13.3 cm. × 6.7 cm. × 3.6 cm. (Fig. 54, 4).

(iii) *Scraper*

No. 37 Long, thin, blade-like flake, with signs of use on one side, and retouch on the other. Rolled and slightly pointed. Locality VII. Surface. Size: 13.6 cm. × 6.6 cm. × 2.3 cm. (Fig. 54, 3).

(*b*) *Flakes with bulb:* Out of eight, two are having bulb on the side, and six at the end. The platform is in all cases simple. One was found in the lowest gravel, and two or three at the junction of Gravel I and II.

(i) *Side Flakes*

No. 50 Bulb portion flaked. Locality V. Gravel surface. Size: 14.2 cm. × 10.2 cm. × 3.0 cm. (Fig. 54, 6-7).

No. 51 Bulb partly flaked. Locality VII. Surface. Size: 11.7 cm. × 8.1 cm. × 3.9 cm.

(ii) *End Flakes*

No. 36 (14) Pear-shaped flake, sides marked by deep flake scars. Locality V. *In situ.* Gravel I, on rock. Size: 13.2 cm. × 7.5 cm. × 3.9 cm. (Fig. 54,5)

No. 49 Thin irregular flake, with prominent bulb. Locality V. Nala. *In situ.* Top of Gravel II. Size: 14.3 cm. × 10.1 cm. × 2.8 cm.

No. 52 Thin roughly heart-shaped flake. Diffused bulb. Locality V. Nala. Junction of Gravel II and III. Size: 8.5 cm. × 10.1 cm. × 2.4 cm.

No. 53 Flake with prominent bulb. Traces of chipping on the upper surface at the butt. Locality VII. Size: 11.0 cm. × 9.7 cm. × 2.4 cm.

No. 54 Flake with diffused bulb. Locality V. Gravel I. Size: 10.7 cm. × 7.5 cm. × 2.7 cm.

No. 55 Flake with prominent bulb. The upper surface has a large deep flake scar. Rolled. Locality I. Size: 9.7 cm. × 8.7 cm. × 3.7 cm.

No. 44 Thick flake, bulb chipped away. Rolled. Locality I. Size: 10.9 cm. × 6.7 cm. × 3.4 cm.

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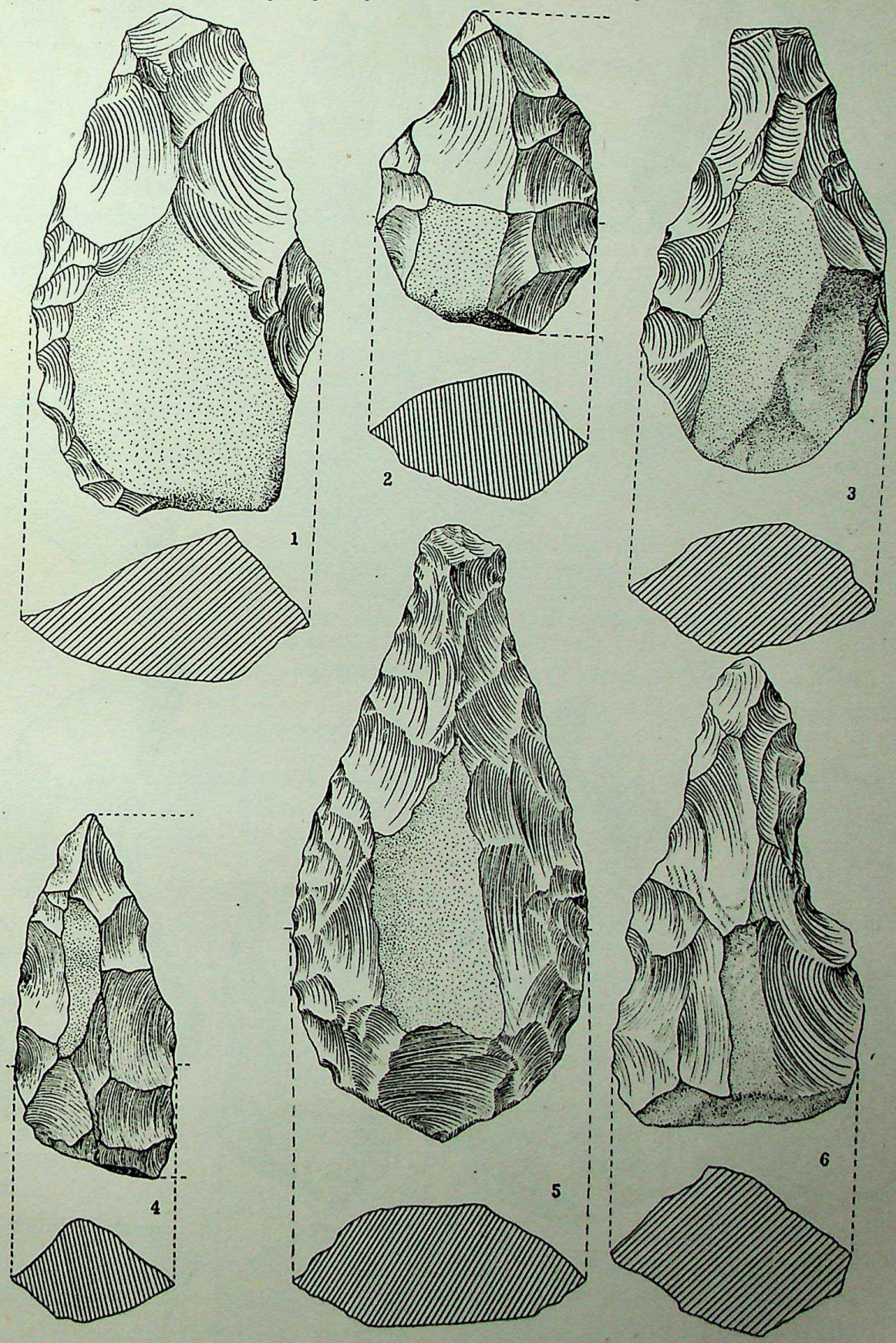

Fig. 50: Hand-axes 1 (3), 2 (4), 3 (9), 4 (8), 5 (1), 6 (5). See pp. 81-82.

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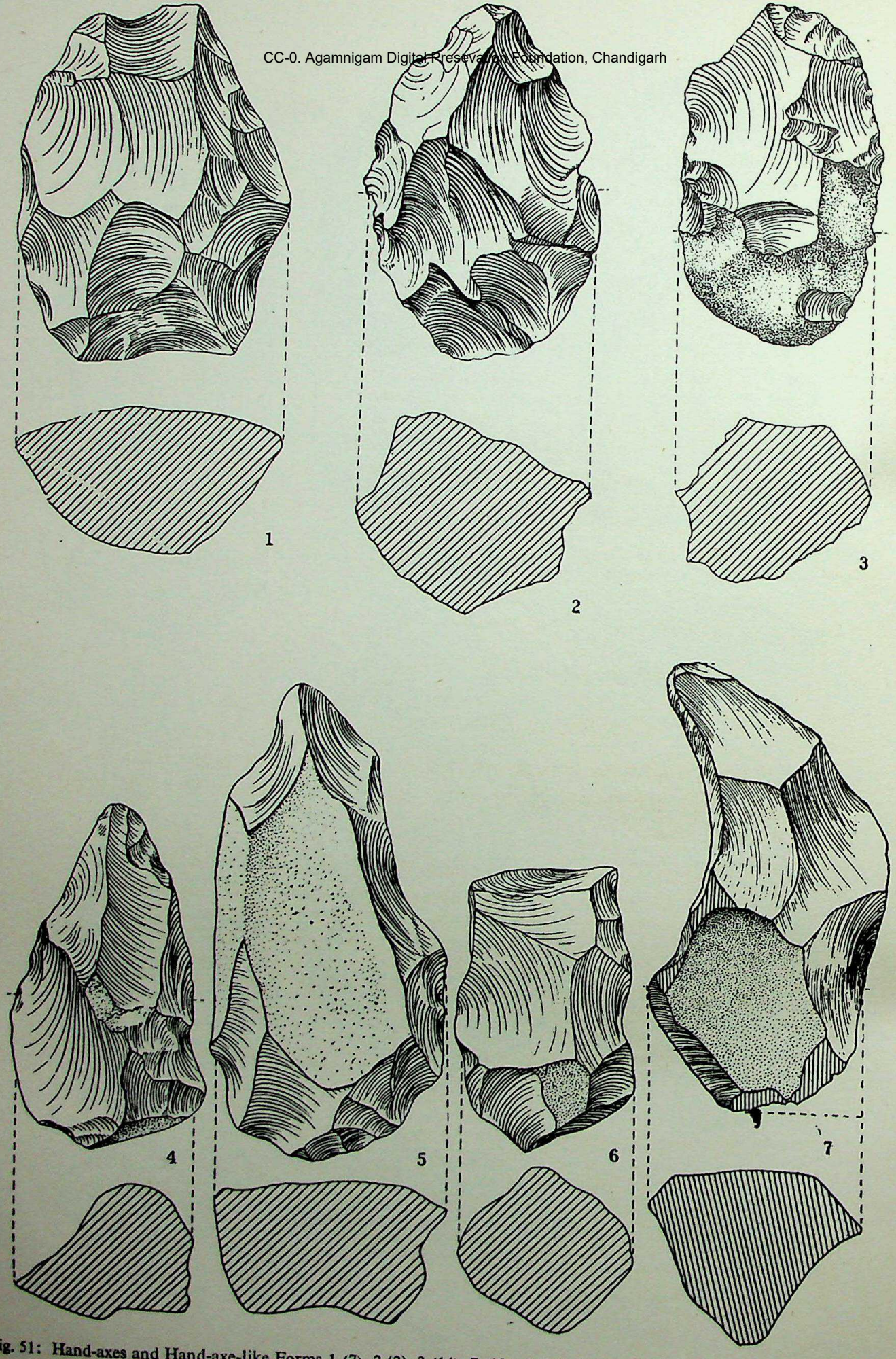

Fig. 51: Hand-axes and Hand-axe-like Forms 1 (7), 2 (2), 3 (14), 7 (10), 4 (94), 5 (95), 6 (98), 7 (10), See pp. 82, 85 and 101.

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IV CORES (Fig. 56)

There are some 12 cores. Since these are not from river pebbles, they are not as large as one finds in the Narmada or in the Sabarmati. Whether the flakes removed are one or more the scars left are generally deep and large, indicating the method of removal.

(i) *Pure Cores*

No. 57 Core with patinated surface. Moderately rolled. Two flakes removed from the upper surface. Locality VI. Surface. Size: 16.1 cm. × 13.9 cm.

No. 60 Core, patinated. One large flake, giving a sharp cutting or chopping edge. Locality VI. Surface. Size: 12.7 cm. × 8.9 cm.

No. 62 Core, patinated, rolled, Locality VII. Size: 12.5 cm. × 11.8 cm.

No. 63 Core, patinated, and rolled, one flake from the underside. Locality VII. Size: 13.5 cm. × 11.1 cm.

No. 50 Tortoise core-like. Two deep and large flake scars on one side, and smaller on sides, as if the core was prepared. Moderately rolled. Locality V. Size: 14.2 cm. × 10.2 cm. × 3.0 cm. (Fig. 56, 4-5).

No. 64 Core, flakes removed from both surfaces. Locality I. Surface. Size: 12.8 cm. × 11.0 cm. × 6.5 cm.

No. 68 Core. Locality VII. Gravel II. Size: 11.0 cm. × 7.5 cm. × 6.5 cm.

(ii) *Choppers and Discoids* (Fig. 56)

These might have been originally cores, but on more than half the periphery they are flaked from both sides, which gives the specimen a jagged wavy edge.

No. 61 Chopper, rolled. Locality V. River bed, Size: 11.0 cm. × 9.8 cm.

No. 67 Discoid with irregular wavy edge around. Rolled. Locality VI. Top of Gravel II. Size: 10.2 cm. × 8.6 cm. × 6.0 cm.

No. 70 Thick small flake with marginal chipping, and traces of retouch. Rolled. Locality VI. Surface. Size: 9.7 cm. × 8.3 cm. × 4.6 cm.

No. 69 Discoid with flake scars on one surface; under and back with cortex. Locality V. Surface. Size: 8.6 cm. × 6.9 cm. × 6.8 cm. (Fig. 56, 6).

No. 72 Discoid, alternatively flaked around, giving a wavy edge. Rolled. Locality I. Size: 8.4 cm. × 7.7 cm. × 3.1 cm.

V CHOPPING TOOLS OR HAMMER STONES (Fig. 55)

Besides ordinary cores and discoids described above, there are some 14 others which may be called " Hammer Stones ", or " Chopping Tools" of MOVIUS. Fully or partially worked cores, with a round, semi-circular or triangular cross-section, these have flaked or unflaked surface on one side (for holding), whereas on the other there is a conical blunt

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point or surface, with ' equilatorian jagged edge ' due to alternate flaking, partly ' free ' and partly ' step '. This suggests that one of the main functions of these tools was for striking, as with a hammer, and also chopping for which the " jagged sinuous edge " was used.

According to the section and shape, three sub-groups may be made :

(i) *Hammer-stones with round section, flat on one end, and conical at the other.*

No. 76 (No. 4) Slightly rolled. Locality V. Surface. Size: (Diameter) 7.9 cm. (Fig. 55, 2).

No. 74 (No. 2) Slightly rolled, conical point perhaps broken, probably bears marks of use. Locality V. Surface. Size: 7.6 cm. (Fig. 55, 1).

No. 80 (No. 4A) Slightly rolled. Locality V. Surface. Size: 8.1 cm.

No. 78 Rolled. Locality VII. Size: 8.7 cm.

No. 73 (17) Largest, slightly rolled, with point perhaps broken. Locality V. Size: 10.5 cm.

No. 75 Heavily rolled. Locality VI. Surface. Size: 8.4 cm.

No. 83 Heavily rolled. Locality VI. Surface. Size: 5.5 cm.

No. 84 Rolled. Locality VI. Surface. Size: 5.5 cm.

No. 85 Slightly rolled. This looks like a genuine core, from which a number of small and large flakes have been removed, and while doing so the platforms have been changed, so that the earlier flake scars are truncated. Locality VI. Surface. Size: 17.3 cm. (Fig. 55, 7).

(ii) *Hammer-stones with triangular section, flat cortex surface on one side, the other has a sinuous edge.*

No. 81 Slightly rolled. Locality VI. Surface. Size: 7.2 cm. (Fig. 55, 6).

No. 82 Slightly rolled. A large flake has been so removed as to give a scraping edge. Locality VI. Surface. Size: 6.9 cm.

No. 79 Rolled. Locality III. Surface. Size: 9.1 cm. (Fig. 55, 5).

(iii) *Hammer-stone with roughly rectangular section, flat on one surface with cortex, while the other two shorter sides, as well as the longitudinal side, have a jagged, sinuous edge.*

These features make a double-ended hammer-stone or chopping tool.

No. 77 Slightly rolled, patinated. Locality VI. Surface. Size: 12.1 cm. × 6.7 cm. × 6.8 cm. (Fig. 57, 1).

VI Choppers or Side-Scrapers (Fig. 57)

There are eight of these. All are elongated oval in plan, having roughly convex edge on the longer side, whereas the side parallel to it is

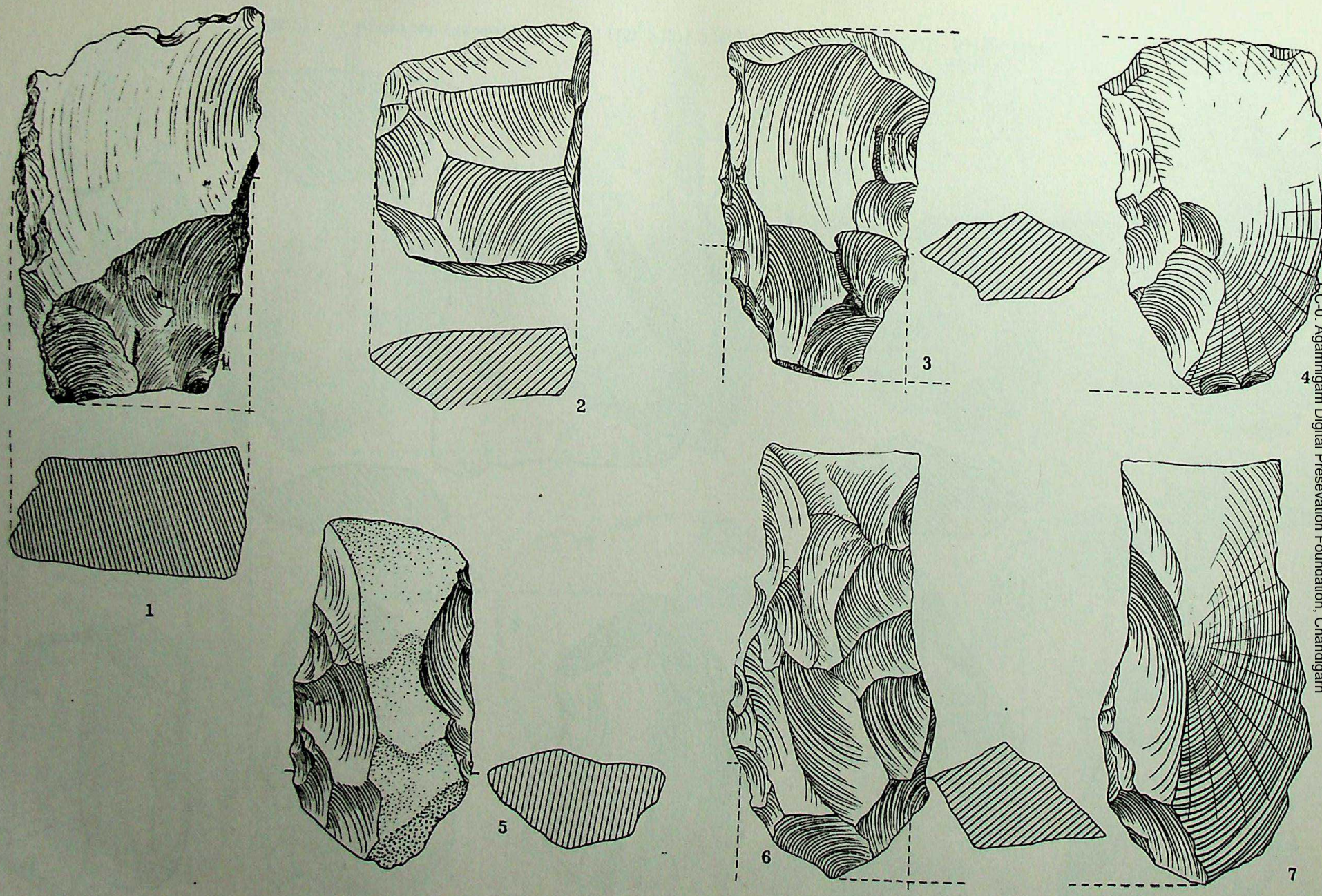

Fig. 52 : Cleavers 1 (16), 2 (28), 3-4 (20), 5 (22), 6-7 (23). See pp. 85-86.

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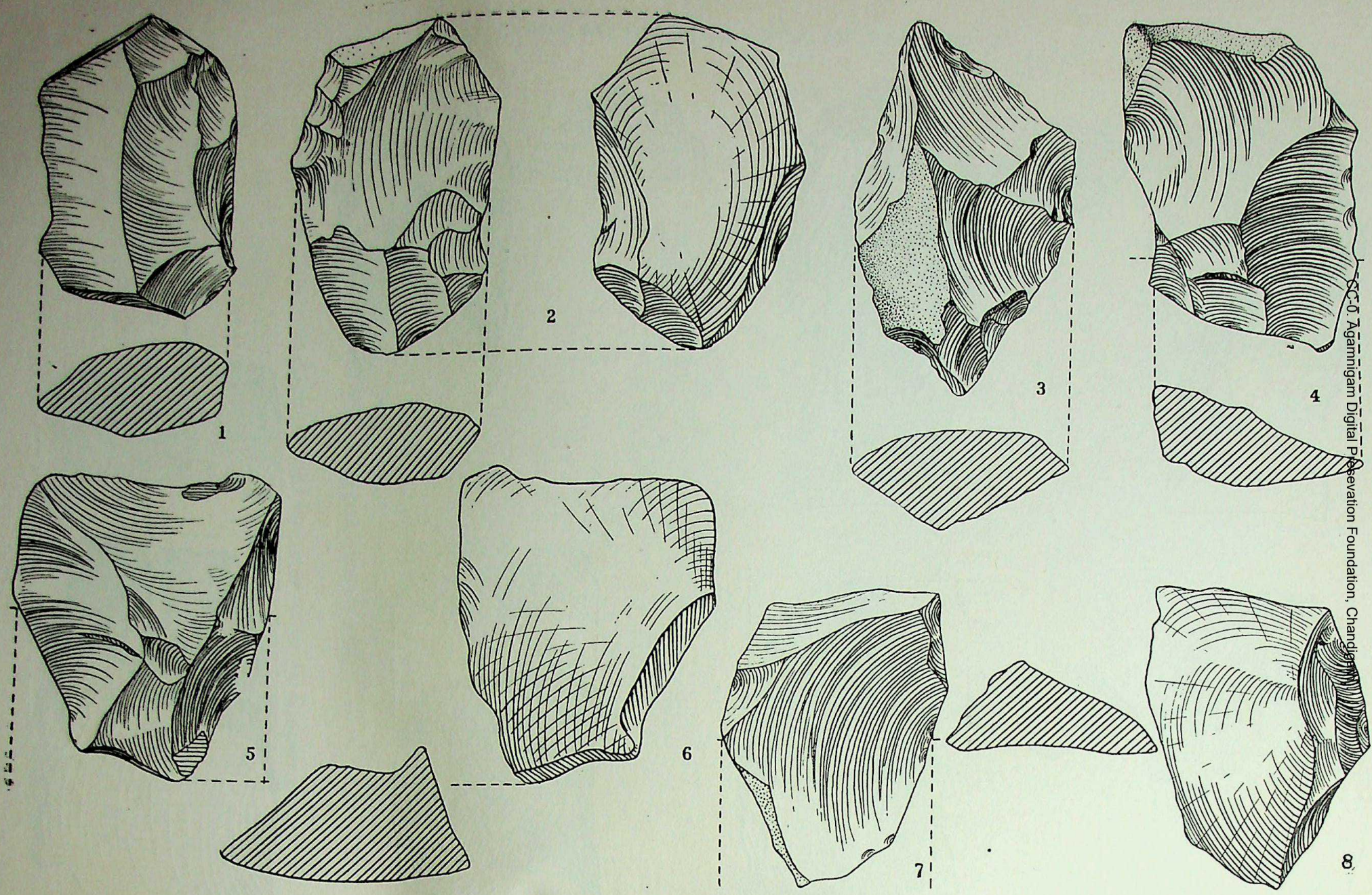

Fig. 53 : Cleavers and Cleaver-like Flakes 1 (15), 2 (27), 3 (25), 4 (26), 5-6 (33), 7-8 (32). See pp. 86-89.

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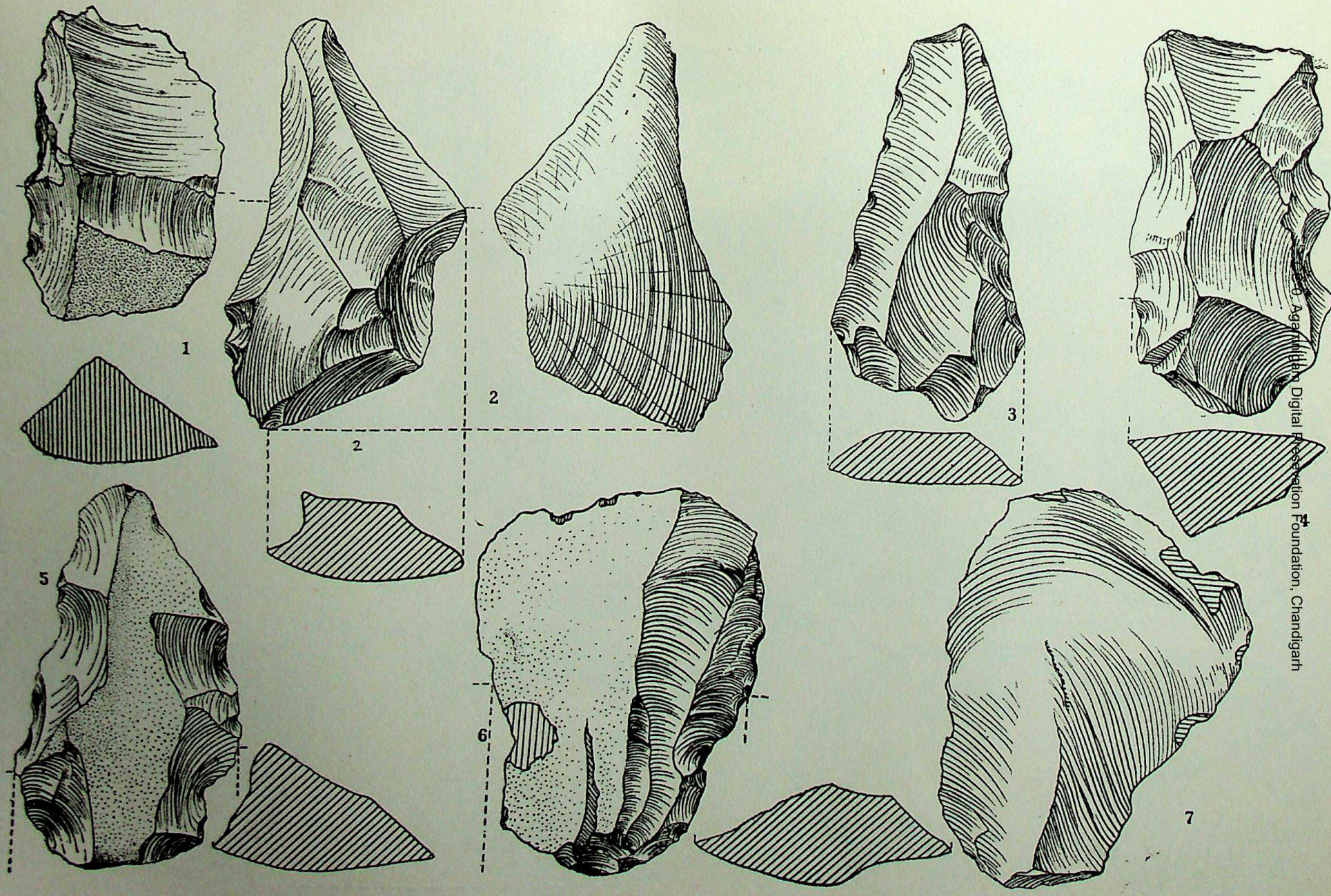

Fig. 54 : Cleaver-Flakes and other Flakes 1 (31), 2 (43), 3 (37), 4 (40), 5 (36), 6-7 (50). See pp. 89-90.

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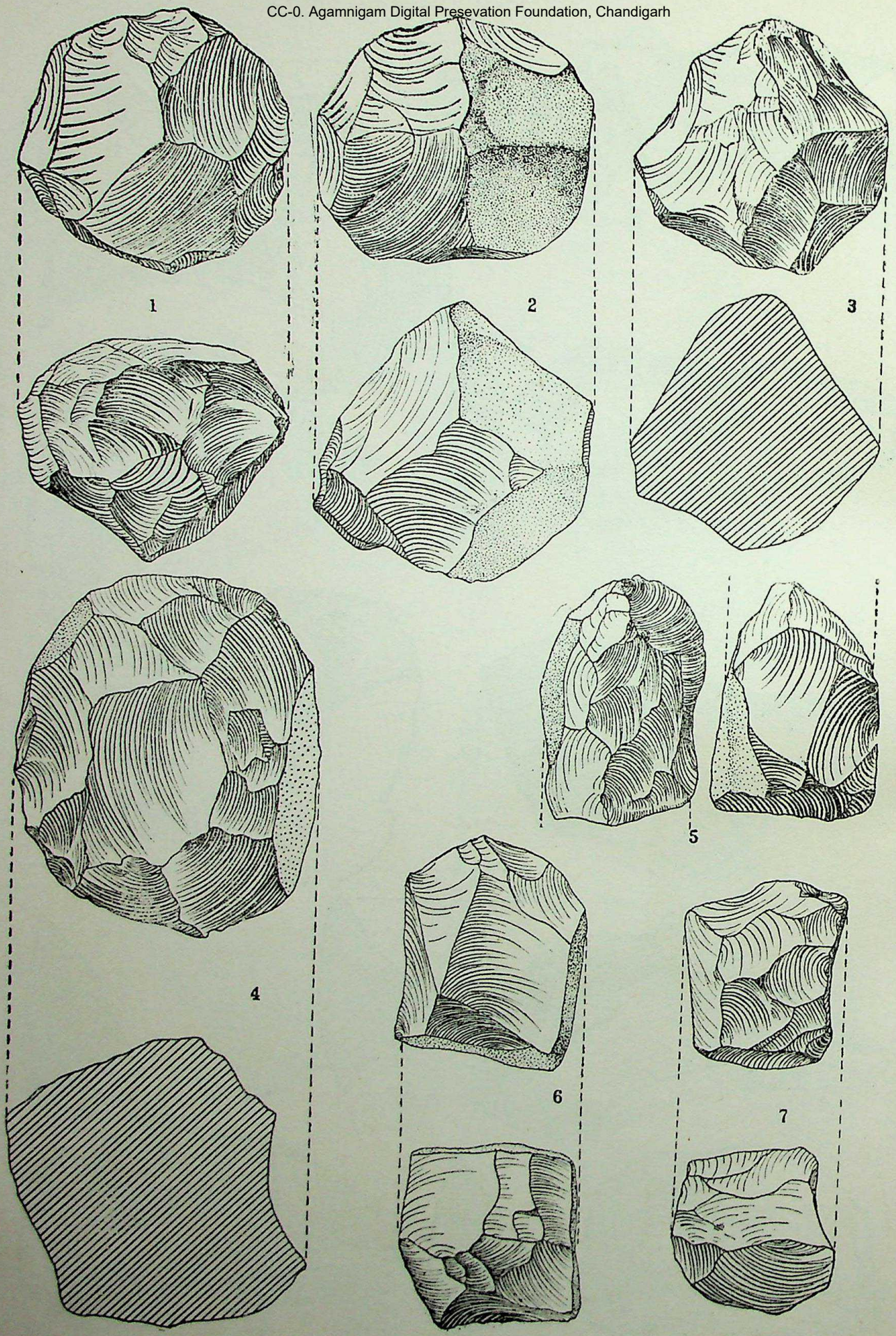

Fig. 55: "Hammer-stones" or "Chopping Tools" 1 (74), 2 (76), 3 (80), 4 (78), 5 (79). 6 (81), 7 (85). See p. 94.

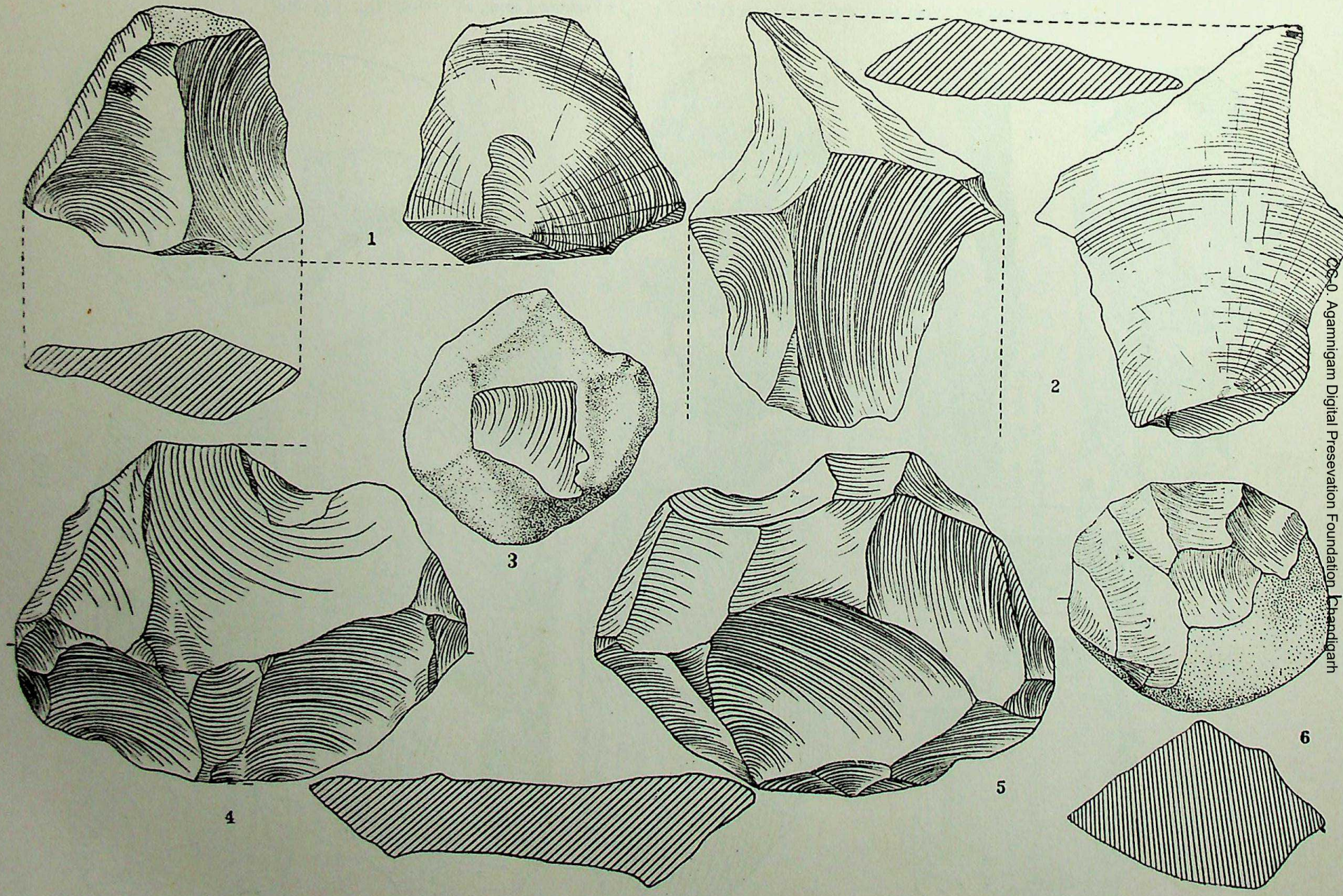

Fig. 56 : Flakes, Cores and Discoids 1 (58), 2 (43), 3 (71), 4-5 (56), 6 (69). See pp. 90 and 93.

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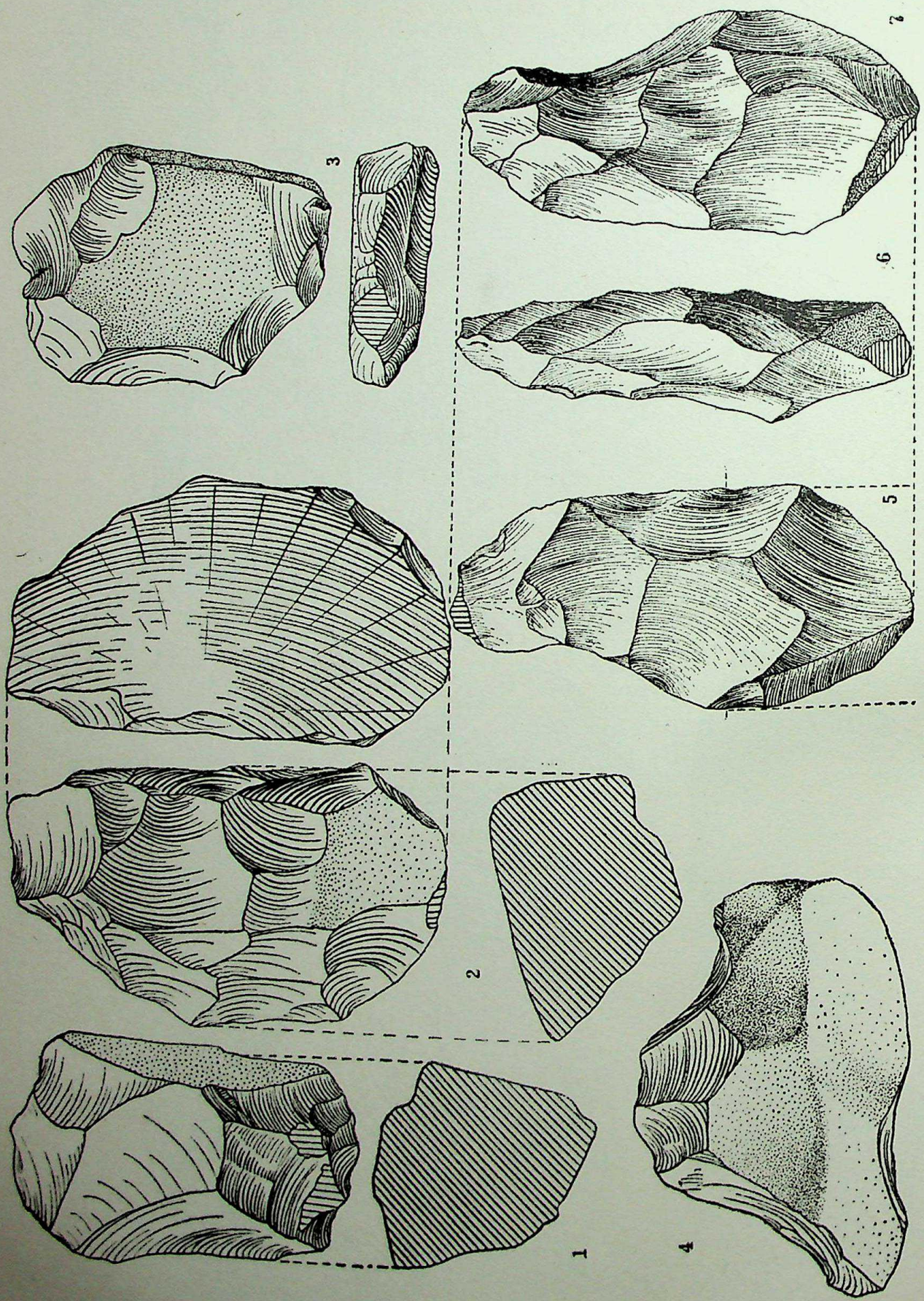

Fig. 57 : "Choppers" or "Side Scrapers (2)" 1 (77), 2 (87). 3 (93), 4 (88), 5-6-7 (90). See pp. 94 and 101.

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thick, with or without cortex and flaked or unflaked. The underside is generally flat, being the primary flaked surface, but there are exceptions. The thick side leaves no doubt that it was meant for holding the tool. The other could have been used for cutting or scraping, though there is no minute retouch on any tool. Other flaking is mostly by direct percussion and at times from the edge upwards, which has left some " step " scars.

No. 87 One of the most symmetrical of the group, with flake scars all over the body, except the under surface which is quite flat and perhaps unflaked. Rolled. Locality VI. Surface. Size: 15.2 cm. × 8.2 cm. × 6.0 cm. (Fig. 57, 2).

No. 81 Similar to No. 87 on a side flake. Rolled. Locality VI. Surface.

No. 89 Similar to No. 87, but has neat flaking on a side flake. Rolled. Locality VI. Surface. Size: 15.3 cm. × 7.8 cm. × 4.0 cm.

No. 90 Similar to 89, but is flaked all over including the underside and thus resembles a hand-axe. Size: 15.0 cm. × 7.0 cm. × 3.7 cm. (Fig. 57, 5-6-7).

No. 94 Has a high hump in the middle and one end is pointed. One large flake on the under surface. Minutely flaked on the hand-hold side. Rolled. Locality I. Size: 11.4 cm. × 6.7 cm. × 4.4 cm.

No. 92 Broad oval in shape and flatter. Rolled. Locality: III.

No. 93 Similar to 92, but edges flaked from both sides. Rolled. Locality VI. Surface. Size: 10.9 cm. × 8.0 cm. × 2.6 cm. (Fig. 57, 3).

No. 88 This is different from the rest. It is on a thick core. Its side is fashioned roughly into a point, while the hand-hold side is unflaked and has the uneven cortexed surface. Unrolled. Size: 13.2 cm. × 8.6 cm. × 6.2 cm. (Fig. 57, 4).

VII Miscellaneous and Unique Forms (Fig. 57, 4)

Of the few remaining, only two are here described. Each is unique in its own way.

No. 98 (34) It was previously described[7] as "tabular hand-axe on core". Thick and rectangular, it has deeply flaked vertical and front sides, all by direct percussion. The underside is rolled and probably unflaked. The butt end is fully worked and ends in a small point. Thus, this piece is worked on four sides, one end of which is pointed and the other has a broad edge, and the surfaces are flattish. Locality I, Gravel bed I. *In situ*. Size: 10. 2 cm. × 5.7 cm. × 4.5 cm. (*Fig. 49*, 1-2-3 and Fig. 51, 6).

No. 95 This is also a novel type of tool, but may be regarded as a hand-axe. It has a beak-like point and gently sloping butt, but the sides are thick and vertical as in No. 98. A large, deep flake has been removed from the under surface at the butt end (for hand-hold or hafting) and two smaller ones from the rest of the surface. Slightly rolled. Locality I. Surface. Size: 16.3 cm. × 8.0 cm. × 4.5 cm. (Fig. 51, 5 and *Fig. 49, 2*).

7. Sankalia, *op. cit.*, p. 45.

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V

PERIOD II: MIDDLE PALAEOLITHIC

Stratigraphy

In the previous chapter, it was mentioned that this period is represented by the middle gravels (Gravel II) at Nevasa, and the lowermost gravels at Bel Pandhari, Suregaon and Kalegaon, all on the Godavari. At the last mentioned site a complete skull (including the horns) of *Bos namadicus Falc.*[1] was found fully embedded in the gravels. It took about eight hours to extricate the skull. A number of tools were found fixed into the skull. The same tool-types are repeated in the industry occurring in this gravel. Thus, there is no doubt about the contemporaniety of the skull and the industry. (See *Fig. 43 b.*)

Similar industry was found in the Narmada valley in the region around Maheshwar by SANKALIA and SUBBA RAO and in the region of Hoshangabad and Narsingpur by MCCOWN and BANERJEE. At Maheshwar it has been associated with Terrace 2.[2] No fossil has so far been discovered in this region. At Hoshangabad and Narsingpur the industry was located in the Second Gravel.[3] Here the industry was found associated with Middle Pleistocene fauna. JOSHI discovered similar tools from the stratified gravels of the Tapi and the Rewa.[3] Similar finds were made by MOHAPATRA in Orissa.[4]

Name and Dating

Stratigraphically, this industry succeeds the Chelles-Acheul industry in the Narmada, the Godavari-Pravara, the Karnatak and Orissa sites. In the Hoshangabad-Narsingpur[5] region it occurs in the middle or second

1. For its speedy identification we are indebted to Prof. F. E. ZEUNER of the Institute of Archaeology, London University, to whom a full size drawing of the specimen was sent. Later, his identification was confirmed by the Geological Survey of India, to whom the actual specimen was sent. The specimen at present is in their custody.
2. See *I.A.R.*, 1958-59, pp. 28-29.
3. *Ibid.*, p. 27.
4. *Ibid.*, 1957-58, p. 41, and 1958-59, p. 36.
5. De TERRA found them in the black soil, for which one explanation has been given above (p. 75). Another is that these tools are found in the black soil if some veins of jasper are nearby, for instance at Dongargaon and Choli, 3 and 6 miles respectively to the south and north of Maheshwar. MALIK reports them as surface finds. I have found them *in situ* in the Second Gravel often embedded in the fossils. MCCOWN and KHATRI accompanied the author during the exploration of the Narmada Valley. Later KHATRI has worked independantly and has discovered them *in situ*.

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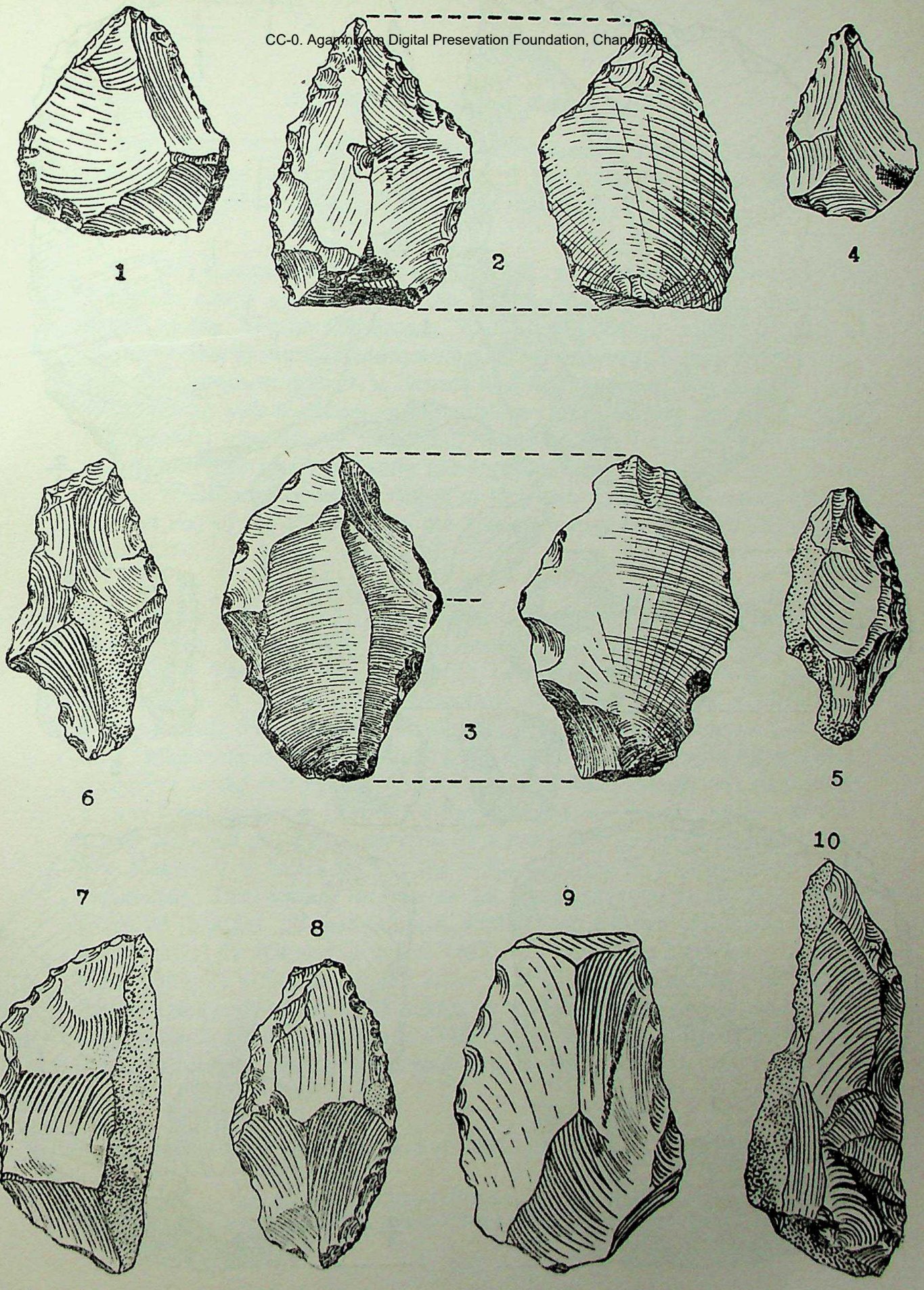

Fig. 58 : Middle Palaeolithic Implements : Simple Point. [1 (NVS 59), 2 (KG-1), 3 (NVS 253), 4 (BOD-257)] ; Tanged Points [5 (BPD-49), 6 (BPD-328)] ; Side Scrapers [7 (BPD-164), 8 (KG (x)-429), 9 (NVS 40), 10 (BPD 150)].

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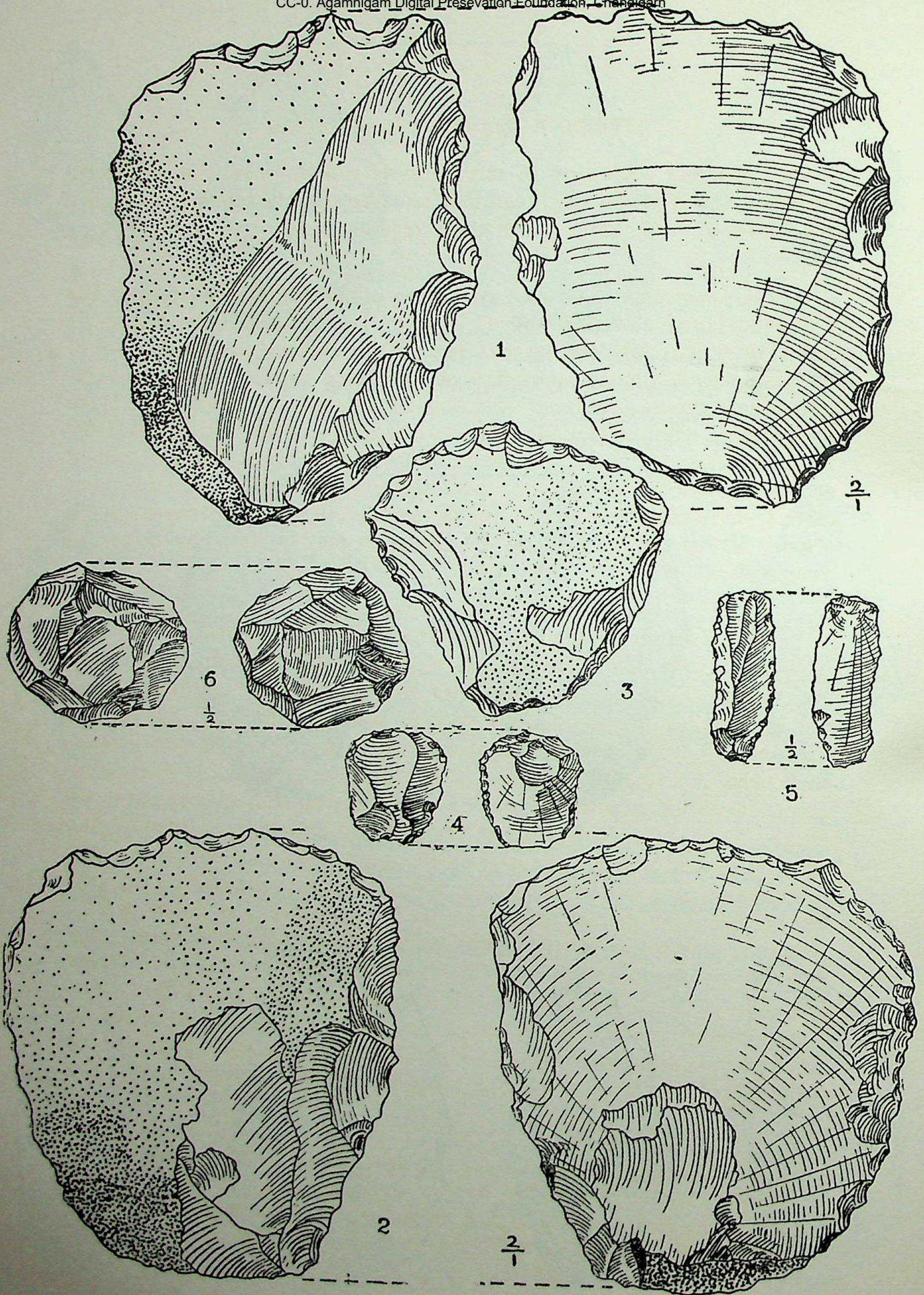

Fig. 59: Middle Palaeolithic Implements : End Scrapers [1 (BPD 532), 2KG-463), 3 (NVS 582)] ; Levallois type flake [4 (NVS-374)] ; Blade-like-Flake [5 (NVS 468)] ; Core [6 (NVS 508)].

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gravels where a succession of three gravels can be seen. Similar stratigraphy is found at Nevasa. It can thus be taken that the industry succeeded the Chelles-Acheul culture in the above regions.

Bos namadicus Falc. is a type fossil of the Middle Pleistocene. The Narmada fauna also confirms the dating. The industry thus should be dated to the Middle Pleistocene. The Chelles-Acheul culture is also of the same date as similar palaeontological evidence was found in its association. The topmost gravels at Nevasa and Bel Pandhari yielded a few blade tools. Along with the blade tools rolled specimens of this industry (Middle Palaeolithic) were found. The blade industry is still insufficiently studied and is not associated with any fossil remains. In view of the rather uncertain Pleistocene-Holocene dating of the black soil the uppermost gravels (Gravel III) of the Pravara and the Godavari may be dated to the end of Pleistocene.

If we search for the cultural and technological parallel in the world background, we find that similar industries were found in the Late Pleistocene. Thus we are faced with two alternatives :—Either to date the industry in the Middle Pleistocene, according to fossil association. This, however, does not account sufficiently for the time difference between the Chelles-Acheul and this industry. Or, to date it in the Upper Pleistocene, according to the culture and technological parallels, though not supported by any fossil evidence. In view of the fact that in a bigger horizon a new age is heralded not by the survival of a specis but by the appearance of a new species, it is better to date the industry to the beginning of the Late Pleistocene. This dating, in spite of all the arguments, is no more than tentative. Further palaeontological studies will remove this uncertainty. Accordingly, the industry is called " Middle Palaeolithic " and not " Lower Palaeolithic "[6]. Whatever be the exact geological and chronological name that is finally given to the industry, we would suggest that it be termed " Nevasian " after the type-site. This suggestion was fully approved by the late Professor CHILDE when he examined the specimens.

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6. KHATRI has found a complete skull of *Elephas hysudricus* in the same bed with this industry. (*A.I.R.*, 1958-59, p. 27).

   We may cite here the opinion of Prof. ZEUNER from his report. He suggested that the industry might be regarded as a flake culture of the Lower Palaeolithic period.

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Technique

So far the technique is concerned, there are a few flakes and cores which definitely show the knowledge of the facetted platform technique. The flakes are ovalish or triangular in shape, and are comparatively thin. Such flakes were often turned into points. However, genuine tortoise cores are extremely rare. The majority of the tools, on the other hand, show a peculiar mixture of free-flaking or percussion by soft cylinder hammer. Such cores often show deep and irregular flake-scar inspite of its small size. (*e.g.* No. 508, Fig. 59). A few cores show work, all over, by pressure technique and have an irregular wavy edge.

The retouches are done from both the surfaces, though rarely in the same region. Thus most of the tools show that some parts have been retouched from the upper and some from the lower surface. Flat nodules were always worked upon by a minimum of retouch.

Tool Types

Besides flakes and cores, the tool types of this industry are points, scrapers, and borers. The flakes are in abundance and one can very easily surmise that the makers produced a number of flakes and chose only those which were easily made into a regular tool. Most of the flakes were detached without any preparation of the platform. The cortex was often not removed from the platform. Most of the cores also exhibit the same character. These show only two or at the most three flake-scars. A few flakes, on the other hand, show a regular facetted platform. But the corresponding type of core is very rare. Only two cores show that the flakes were detached in the prepared platform technique. There is one core which shows that flake-blades were taken off it. This core is interesting for it shows the beginning of the production of blades.

Genuine blades are completely absent from the industry. A few thick narrow blade-like flakes were found. These specimens were detached not by the pressure technique. DEO and ANSARI found in the Tapi valley gravel deposits an industry, very similar to the Nevasian industry. That industry contains a fair number of long blades and flake-blades.

Not a single burin was found in the stratified collection from Nevasa. A few burins were however collected as surface finds. It is very difficult to determine their horizon or cultural affinity. Most of them definitely

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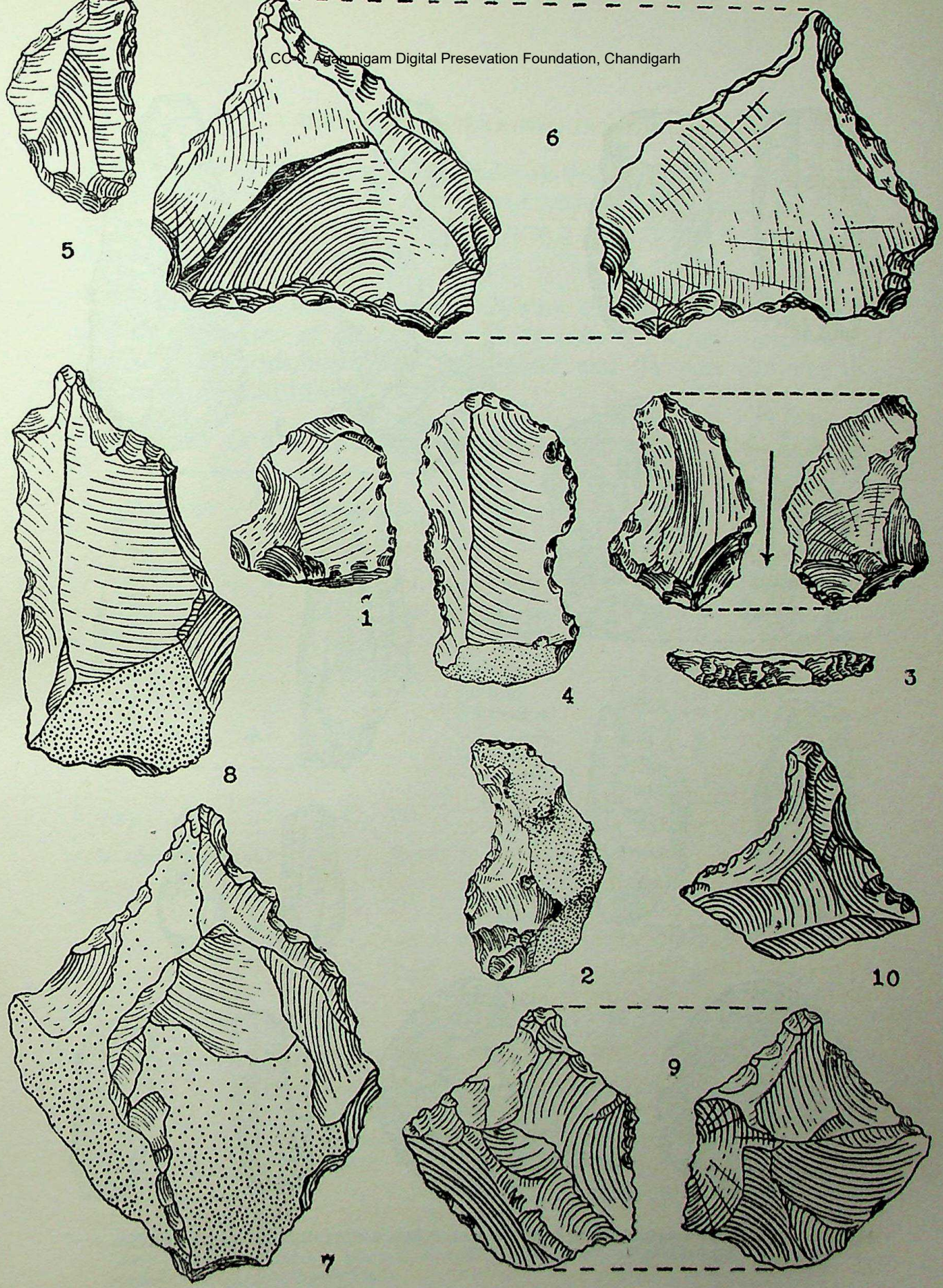

Fig. 60 : Middle Palaeolithic Implements : Hollow Scrapers [1 (BPD 260), 2 (NVS 316), 4 (WK 4)] ; Round Scraper [5 (BPD-439)]; Borers [6 (KG 181), 7 (BPD 191), 8 (KG (x) 174), 9 (KG (x) 365), 10 (KG (x) 497)].

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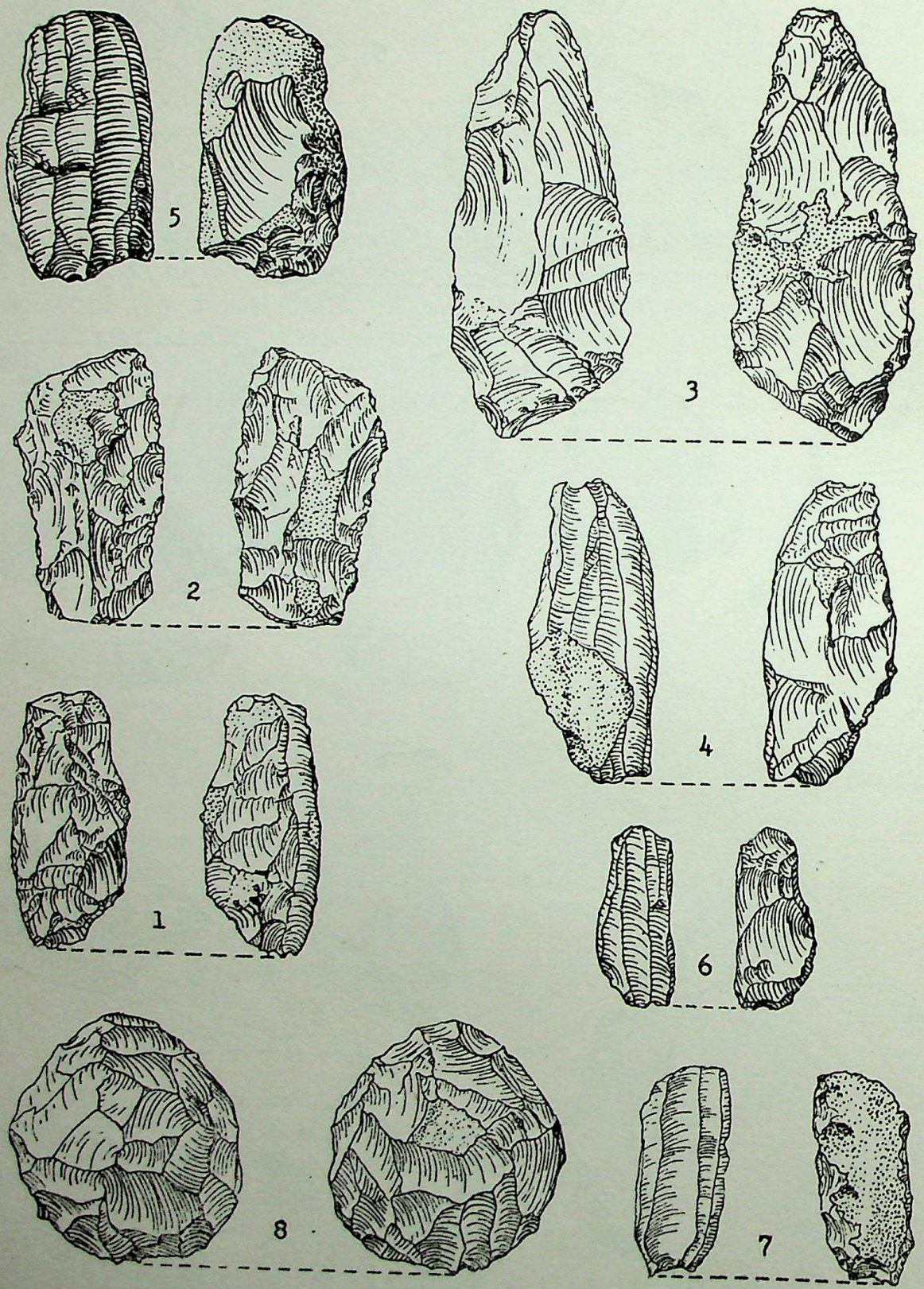

Fig. 61 : Cores I (First Stage), Nos. 1, 2, 3 : II (Incomplete), Nos. 4, 5, 6 : III (Thin and tabular), Nos. 6,—7 : IV (Core ball) No. 8. See pp. 117 and 120.

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show technological affinity to the industry discovered in the uppermost gravels (Gravel III). As this industry is not yet sufficiently studied it remains to be ascertained whether the burins form a part of this industry. They do not go with the Chalcolithic.

Thus this industry, though it does not show any true blade, shows all the characters of an incipient blade industry, in the narrow thick parallel-sided blade-like flakes, flake-blades and the core showing the production of flake-blades.[1]

INVENTORY OF THE NEVASIAN INDUSTRY AT THE TYPE SITE—NEVASA

Tool-type	Percentages	Sub-types	Percentage of the types	Percentage of regular tool-types
1. Points ..	6 % (18)	(*a*) Simple	83.3% (15)	4.9% (15)
		(*b*) Tanged	16.7% (3)	1.0% (3)
2. Scrapers ..	26.6% (82)	(*a*) Side	24.4% (20)	6.5% (20)
		(*b*) End	18.3% (15)	4.9% (15)
		(*c*) Hollow	44.0% (36)	11.7% (36)
		(*d*) Round	9.8% (8)	2.6% (8)
		(*e*) Point-shaped	6.1% (3)	1.0% (3)
3. Borers ..	7.0% (21)			
4. Scraper-Borers ..	1.0% (3)			
5. Flakes ..	37 % (114)	(*a*) Worked or utilized	71 % (81)	26.3% (81)
		(*b*) General	29 % (33)	10.7% (33)
6. Cores ..	21.8% (67)	(*a*) Worked or utilized	12 % (8)	2.6% (8)
		(*b*) General	88 % (59)	19.2% (59)
7. Worked Nodules ..	1 % (3)			

Total tools	—	100% (617)
Regular tools	—	50% (308)
Rejects	—	50% (309)
		617

1. Flake-blades are thin long flakes, often parallel-sided but too broad for a regular blade. Blade like flakes have too much thickness for a blade. This artificial distinction is made for the sake of convenience.

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POINTS (Fig. 58, 1-6.)

1. NVS-59. Well made triangular point on a side-flake. The sides are marginally retouched—some portion from the upper and some from the under surface. The base is deliberately made thinner by the removal of a flake evidently to facilitate hafting. The tip is sharp. The platform shows certain amount of preparation and makes an angle of ±90°. The bulb is partially removed. Greyish chalcedony.

2. KG-1. Though comparatively unfinished, especially at the base, this specimen is one of the best retouched ones in the whole collection. Made on an end-flake probably of ovaloid or roughly rectangular shape, it shows well retouched sides and point. The base is thick, and unfinished, though attempts to reduce that thickness can be seen in the removal of several successive flakes in a step-like series. Unprepared platform makes an angle of 90° with the main flake surface. Bloodstone.

3. NVS-253. Made on an end-flake. The small unfacetted platform forms the base of the specimen whence the sides diverge upto the middle of the length of the specimen whence again they converge to the tip. Sides are retouched moderately. Attempts to make the specimen thinner at the base can be seen in the removal of a part of the bulb. Jasper.

4. BPD-257. A roughly triangular point on an end-flake. The sides show big prominent flake-scars and regular marginal retouches. The base is thick. The tip is pointed and shows little retouch on either side. On the undersurface near the tip attempts to reduce the thickness can be seen. The specimen is heavily encrusted with white calcination from the cemented gravel bed. Greenish jasper.

5. BPD-49. The best finished and almost complete tanged point. Made on an end-flake with small slightly obtuse angled unfacetted platform forming the unfinished tip. The right side is thoroughly worked with steep retouches and shows an almost unbroken convexity from the tip to the base of the tang. The other side has retained the original nodular surface. The shoulder is well formed on one side, but on the other side it is not very clear. The tang shows a long and well-made projection slightly bent to the left. Jasper

6. BPD-328. This specimen is an unfinished tanged point. Made on a small nodule the specimen shows an asymmetrical body made by regular flaking mainly from the sides. Both the shoulders are distinct but the one on the right is ill-formed. On the left the shoulder is made by notch-like flake and retouched from both surfaces. On the right the shoulder is made similarly but has been retouched only from one surface. The tip is not yet finished and intensive retouch on one side only has given the tip a bent appearance. The tang is yet to be finished. Jasper.

SIDE-SCRAPERS (Fig. 58, 7-10)

7. BPD-164. Made on a nodule with flat unretouched undersurface. The straight back is blunt and shows original irregular cortex. Two flakes are transversely removed from the cortex region. The convex business edge is marginally retouched only from the dorsal surface. Jasper.

8. KG(x)-429. Made on an end-flake showing convex back and business edge. The back is irregular and shows very little work, done mainly to remove the uneven projections on the cortex surface. Parts of the unevenness can still be noticed. The business surface is elaborately retouched throughout the side, mainly from the dorsal surface. Few retouches can also been seen from the bulbar surface. Original surface of the nodule was used as platform. Jasper.

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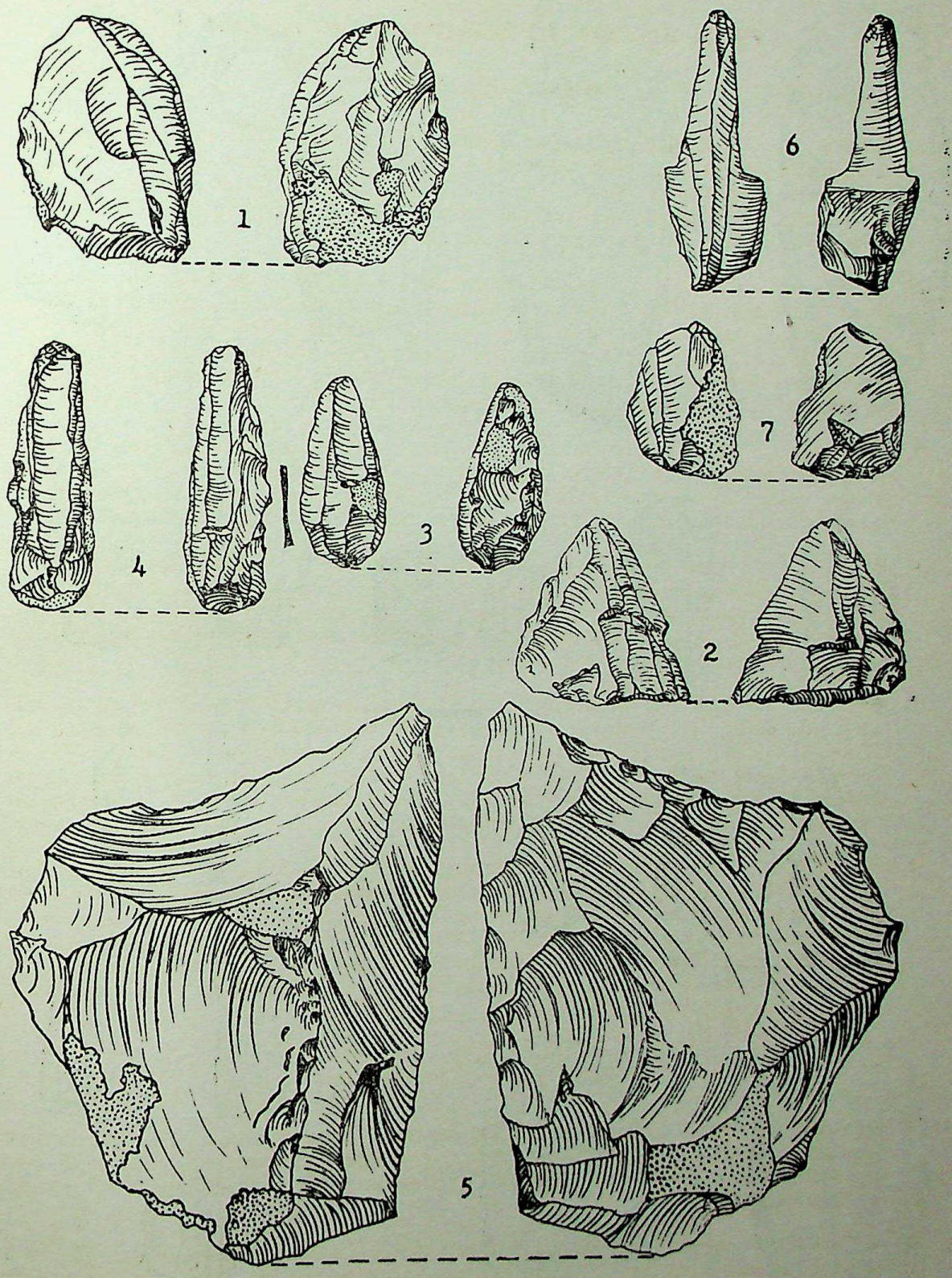

Fig. 62 : Cores IV, Conical, 1, 2: V, Conical, thin and small 3, 4 : (1a), Core Flake, 5 : 3 Rejuvenating Flakes, 6, 7. See pp. 118 and 120.

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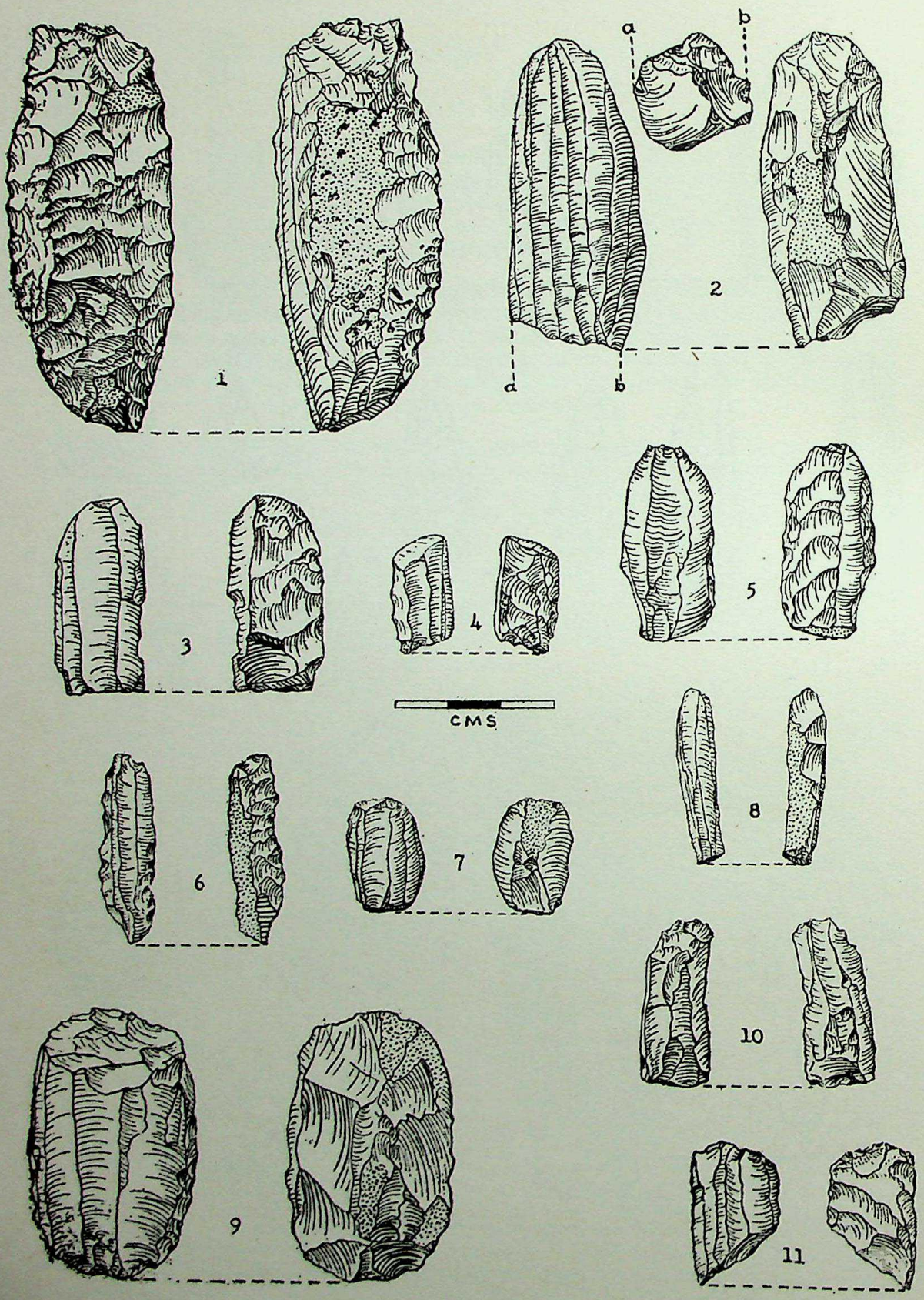

Fig. 63 : 1, 9 ; 3, 6, 4 Cores of Group VI ; 2, 10, 7 ; 5, 11, 8 Cores of Group VII. See pp. 118-19.

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9. NVS-40. Made on a side-flake, the specimen shows work only on the dorsal surface. Longitudinal half of this surface shows cortex, while the other half shows some step-like flaking. Retouches are confined to the convex business edge, but elaborately done and worked only on the dorsal surface. No platform. Jasper.

10. BPD-150. A roughly triangular specimen on an end-flake. The base and the back show very thick unworked blunt nodular surface. The remaining side is slightly convex and intensively worked with primary and secondary retouches. All the retouches are on the dorsal surface only. Undersurface shows very little work. Long unprepared platform and bulb present. Jasper.

End-Scrapers (Fig. 59: 1-3)

11. BPD-532. Made on a roughly trapezoid end-flake showing cortex. The end shows marginal retouches. The right side also shows some indentations. The retouches done from both surfaces. Original cortex was used as platform. Bulle present. Olivine dolerite.

12. KG-463. End more intensively retouched, otherwise similar to 11. Jasper.

13. NVS-582. Made on a small nodule having a natural flat surface. The narrow, almost pointed base, is due to the removal of two blunt facets, one on either side of the tool. The flaring and convex business edge is worked from both the surfaces. Jasper.

Hollow Scrapers (Fig. 60: 1-4)

14. BPD-260. Made on a thin end-flake, the specimen shows careful flaking on the dorsal surface. First, a flake is removed to make the margin very sharp. Then the edge is retouched marginally to bring out the hollow scraping surface. The narrow concavity suggests the scraping of a narrow shaft. Platform shows no preparation. Bulb almost intact. Jasper.

15. NVS-213. Made on an irregular and indeterminate flake of roughly pea-shape with one end pointed and the other end broader. One side shows natural convexity, the other concavity. Some transverse flakes have been taken off to make the margin of the concave side moderately sharp. Chalcedony.

16. NVS-316. Made on an end-flake, this specimen is one of the best hollow scrapers in the collection. A long flake has been first removed along the margin on the left side. The margin was subsequently, thoroughly retouched, marginally and from the dorsal face, thus producing the concave business edge. The specimen shows a convex opposite side thoroughly worked with steep touches from the dorsal face. The bulb has practically been removed, unprepared platform. Jasper.

17. WK-4. This specimen with a marked midrib looks more like a flake-blade. The flake was however detached in the percussion technique, showing a moderately developed bulb of percussion. Platform unprepared. The concave business edge was made on the margin which was already thin enough. Intensive retouches in the region produced the concavity. The retouches are extremely marginal in nature and evidently made after the detachment of the flake. Under surface shows some work especially in the reduction of the thickness of the bulbar region. Jasper.

Scrapers worked all throughout (Fig. 60: 5)

18. BPD-439. Made on an end-flake, this specimen is retouched all throughout the edges excepting at the platform region. Steep retouches done mainly on the dorsal surface. Unprepared bulb and platform present. Jasper.

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BORERS (Fig. 60: 6-10)

19. KG-181. This specimen is one of the better finished ones of the whole series. The specimen shows the utilization of a flake with a natural point. Two facets were removed from the tip and notches made on either side of the tip. These regions were then retouched with steep retouches. On the right side another facet was subsequently made to make it slightly concave at the tip. Similar effect has been obtained on the left side by deeper retouches in that region. Unprepared platform and bulb present. Jasper.

20. BPD-191. The specimen is made on a tri-ridged nodule with a cross-section of a tri-hedral star with the side slightly concave. The naturally pointed end has been fashioned to a borer-tip by slightly retouching the region. Jasper.

21. KG(x)-174. Made on a long end-flake, the bulbar end of which has been converted to the tip. From the nature of the flake it may be guessed that the junction of the platform and a side has been fashioned to the tip. Made by two notches on either side, the shoulders are elaborately retouched. Jasper.

22. KG(x)-365. This specimen is the best finished one of the borers. Made on a roughly rectangular flake, the specimen shows extensive work to fashion the tip. Jasper.

23. KG(x)-497. Made on an end-flake the specimen is a hollow scraper-cum-borer. It shows three arm-like projections—two by the platform and third by the body. On both sides of the end of the flake concavity has been produced and then retouched. These concavities are ideal as the hollow-scraping surfaces. The points of the projections are retouched to make them borer-tips. Jasper.

FLAKES AND CORES (Fig. 59: 4-6)

24. NVS-374. Thin, roundish flake showing two flake-scars on the upper surface, finely facetted platform and partly retouched edges. This flake must have been removed from a tortoise core. Jasper.

25. NVS-468. A long, parallel-sided, narrow but thick blade-like flake with upturned front, showing a hinge fracture technique of flaking. Retouched from both the surfaces, the specimen may be considered as an end-scraper, high plain and slightly obtuse-angled platform. Jasper.

VI

PERIOD III: THE CHALCOLITHIC BLADE INDUSTRY

Special Features

The microlithic blades and other tools of the Chalcolithic period were recognized as a distinct industry at Jorwe[1], the first site on the Pravara. Its wide distribution and the special features have been already demonstrated by SUBBA RAO[2]. To this distribution list may be added, the site of Kullata in the middle Lena Valley in Eastern Siberia. Here the

1. SANKALIA and DEO, *op. cit.*
2. SANKALIA, SUBBA RAO and DEO, in *Excavations at Maheshwar and Navdatoli*, pp. 41-65.

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" Second Cultural Layer " has yielded microlithic blades and " points ". The latter, " points ", however, look like crested-ridge flakes.[3] It is not necessary, therefore, to comment any more on these two aspects. Two things, however, deserve to be noted. First, its stratigraphical position. So far Nevasa is the only site where the tools are found in any quantity deep below the debris of the historical period. At Jorwe, they were almost on the surface, whereas at Navdatoli, the deposits of the latter period are comparatively very thin. At Prakash and Bahal in Khandesh, no doubt, the later deposits are very thick, but whether the tools are in large numbers or not, is not known yet.[4] This remark is also applicable to the sites in Saurashtra and Rajputana.

New Types

The second point to be noted is the fact that a very close study of the material has revealed a few more new types of tools, particularly end-scrapers on blades, blunted back blades, tools with a tang and three or four types of points, called here as borers, drills, and perforators.

The association of polished axes with this industry had already been observed at Brahmagiri. But at Nevasa this assemblage also includes small " workshops ",[5] thus definitely establishing the fact that these were not only used with the tiny tools, but also made at the habitation site.

The distribution charts show that even in the Chalcolithic period, the most important period was the middle phase. This seems to be the main habitation phase.

Workshops

The occurrence of cores in various stages of manufacture as well as the debitage—plunging flakes, crested ridge flakes—leaves no doubt that the tools were made not only in the habitation area, but that these were being made in each house. The inhabitants used primarily chalcedony,

3. MICHAEL, Henry N., "The Neolithic Age in Eastern Siberia" in *Transactions of the American Philosophical Society*, Vol. 48 (NS), pt. 2, 1958, Fig. 58, p. 76.

4. In this connection the evidence from the recent excavations at Daimabad, 15 miles to the west of Nevasa on the Pravara is interesting. It is said that microliths (that is blades) were found in increasing numbers, the largest number being found in Phase III, which is the true Jorwe phase. *I.A.R.*, 1958-59, pp. 17-18.

5. At Daimabad polished stone axes were found on the surface, but none seem to have been observed in the excavation. *Ibid.*, p. 17, pl. XXIA.

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but occasionally agate, and very rarely jaspery chocolate coloured chert. All these are easily available as nodules and as veins in the basaltic rocks. However, from the large number of cores—96 out of 237, that is 40%—having impurities, it would appear that the makers could not get good raw material. So they persisted with the lot they had. Thus flakes have been removed from cores having surfaces of coarse quartz or chalcedony.

Excluding a few flakes and cores which undoubtedly belong to the Middle Palaeolithic and which had made their way to the habitation site, *viz.* the mound, as the river flows just below it at a distance of over a furlong, the total number of the Chalcolithic material was as under :

INVENTORY OF TOOL TYPES

Tool-type	Mound I	Mound II	Total $	Percent of the Grand Total
1. Cores with seven sub-types (i-vii) ..	189	48	331	6.13
1*a* Amorphous Cores ..	—	19	19	0.35
2. Thick Core Flakes ..	12	9	21	0.39
3. Core Trimmings ..	10	1	11	0.20
4. Ball-like Core ..	1	—	1	0.02
5. Amorphous Thick Flakes ..	10	—	10	0.19
6. Flakes with Crested Ridge ..	217	5	222	4.11
7. Plunging Flakes or Flakes with Hinge Fracture ..	179	—	179	3.33
8. Parallel-sided Flakes (unused) ..	1497	23	1608	29.78
9. Parallel-sided Flakes (used) ..	1181	31	1287	23.83
10. Penknife or Obliquely Blunted Blades ..	157	7	164	3.04
11. Lunates ..	112	6	118	2.19
12. Triangle ..	2	—	2	0.04
13. Trapezes ..	4	—	4	0.07
14. Straight Blunted Back Blades ..	158	10	169	3.13
15. Blades Fully Retouched on Both Sides ..			3	0.06
16. Straight Blunted Back-cum-Scrapers ..			5	0.09
17. Points (all types) ..			51	0.94
18. Tanged Point ..			1	0.02
19. Tanged Flakes ..			20	0.37
20. Tanged Blade-cum-Scraper ..			1	0.02
21. Saws or Blades with Serrated Edge ..			159	2.94
22. Scrapers (all types) ..			130	2.44
23. Flakes or Blades used on Both Sides ..			44	0.81
24. Primary Flakes ..			839	15.54
			5399	100.03

$ The total number in each group includes specimens not studied in detail.

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PERIOD III—THE CHALCOLITHIC BLADE INDUSTRY

(1) CORES

According to the nature, shape and technological stage of the core, the 237 cores are divisible into the following groups. It will be apparent that a very small number of cores—40 out of 230—have been worked on all sides. Bad cores, which could not be worked owing to defect in their texture are in a majority.

i. *Cores in the first stage of preparation* (Fig. 61)

All these are roughly tabular in form. Their surfaces are marked by large and deep flake scars, leaving small patches of hard cortex. In the more finished ones, the core is blocked out by pressure flaking, and the ridges with alternate flaking on either side begin to emerge. In the third stage, the sides are still finely finished, and the core is ready for removing a parallel-sided flake.

There are 25 in all; 22 from MD.I and 3 from MD.II.
These vary in length from 1.2 cm. to 6.2 cm.
breadth from 1.5 cm. to 2.5 cm.
thickness from 0.5 cm. to 1.5 cm.

The following specimens are illustrated (Fig. 61, 3, 2, 1)[6]
No. 6822 NVS, H(10)
No. 8312 NVS, H(13)
No. 3611 NVS, A(10*a*)

ii. *Cores which are pointed or truncated at both ends and irregular and seem to have remained incomplete or been rejected after the removal of one or two flakes, because of bad material* (Fig. 61)

There are 13 in all; 7 from MD.I and 6 from MD.II.
These vary in length from 2.7 cm. to 5.2 cm.
breadth from 1.2 cm. to 2.2 cm.
thickness from 0.5 cm. to 1.5 cm.

The following two are illustrated (Fig. 61, 4, 5).
No. 6755 NVS, I(6)
No. 3082 NVS, X(4)

iii. *Cores comparatively small, thin and tabular with one end, at times, obliquely truncated, the upper surface having a few flake scars and the under flat with a cortex, sometimes partly removed.* It is indeed

6. The order of the smaller figure numbers corresponds with the Field numbers illustrated.

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difficult to say whether the cores have become so thin by frequent removal of flakes, or a thin nodule having cortex on one side was originally chosen (Fig. 61).

There are 26 in all; 20 from MD.I, and 6 from MD.II.

One is of reddish jasper (No. 7338), one of speckled greenish chert (No. 6796), and one of obsidian-like blackish chalcedony. (No. 3886).

These vary in length from 1.9 cm. to 3.4 cm.
breadth from 0.8 cm. to 2.4 cm.
thickness from 0.5 cm. to 1.5 cm.

The following two are illustrated (Fig. 61, 6, 7).
No. 8023 NVS G(12)
No. 7338 NVS F(11)

iv. *Cores, conical, with flat truncated base, a few flake scars on the upper surface, the under having cortex* (Fig. 62).

There are 18 in all; 14 from MD.I and 4 from MD.II.
These vary in length from 0.5 cm. to 0.25 cm.
diameter (breadth) from 1.5 cm. to 2.2 cm.

1 is of chert (No. 4840); 2 of green and dark red jasper (Nos. 6113 and 4728).

The following two are illustrated (Fig. 62, 1, 2).
No. 7990 NVS E(4)
No. 4727 NVS Y(5)

v. *Cores comparatively thin and small*, as in group iii. But their one end is pointed and other is naturally rounded or facetted. A few flakes have been removed from the upper surface, the under has invariably cortex. The remarks made on the thinness of cores in group iii also hold good here (Fig. 62).

There are 28 in all; 22 from MD.I, 6 from MD.II.
Length 1.9 cm. to 3.4 cm.
breadth 0.8 cm. to 2.4 cm.
thickness 0.5 cm. to 1.5 cm.

The following two are illustrated (Fig. 62, 3, 4).
No. 6825 NVS H(10)
No. 2537 NVS B(7)

vi. Next to cores flaked on all sides, this is the finest group (Fig. 63).

According to the thickness of the cores they may be grouped into:—

(*a*) *Cores, thick and tabular*, with few flake scars on the upper surface or one side only and fine pressure flaking on one or more sides and generally bearing signs of a crested ridge.

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(*b*) *Cores, thin and tabular* with a few flake scars on the upper surface, and fine pressure flaking on the underside.

From (*a*) many more flakes can still be removed by rejuvenating the core. But this is almost impossible in group (*b*), where nearly every core has reached the limit of its thinness.

Group (*a*) has 24 in all; 15 from MD.I, 9 from MD.II.

Length 2.4 cm. to 7.5 cm.
breadth 1.5 cm. to 3.5 cm.
thickness 0.9 cm. to 2.7 cm.

Of these, No. 4525 NVS.A(8) is of cherty jasper, and dark-brown and black. The rest are all of chalcedony.

Two are illustrated. These are the longest and thickest respectively of all the Nevasa cores. (Fig. 63, 1, 9).

No. 685 NVS MD.I G(11).
No. 2785 NVS MDII X(4)

Group (*b*) 63 in all; 55 from MD.I and 8 from MD.II.

Length 2.0 cm. to 4.4 cm.
breadth 1.2 cm. to 1.9 cm.
thickness 0.5 cm. to 1.2 cm.

Of these two are of brown jaspery chert, and one of blackish mottled chalcedony.

Three are illustrated (Fig. 63, 3, 6, 4).

No. 8369 NVS F(13)
No. 5137 NVS I(6)
No. 6189 NVS MD.II Y(6).

vii. *Cores worked on all sides* (Fig. 63).

This type may be again divided into two groups :—

(*a*) cores fully worked on all sides

(*b*) cores partially worked on all sides.

In (*a*) the cores are generally conical and bear parallel flake scars all round. Where these are quite regular, they appear flaked as in No. 2594.

In (*b*) the cores are cylindrical or tabular, and the flaking is taken around the surface, but not completely. In one case, a flake is taken out on the underside, at right angles to the main flake surface on the upper surface.

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In (*a*) there are 16; 14 from MD.I and 2 from MD.II.
Length 2.5 cm. to 6.0 cm.
breadth 0.8 cm. to 3.8 cm.

Three are illustrated (Fig. 63, 2, 10, 7).
No. 2594 NVS D(7) [Finest core in the entire collection]
No. 3765 NVS MD.II X(4)
No. 2421 NVS MD.I G(2).

In (*b*) are 23; 20 from MD.I, and 3 from MD.II.
Length 2.2 cm. to 3.5 cm.
breadth 0.5 cm. to 1.7 cm.
thickness 0.6 cm. to 1.2 cm.

Three are illustrated (Fig. 63, 5, 11, 8).
No. 7115 NVS G(12)
No. 7165 NVS F(11) (here a flake has been removed from the underside at right angles to the main flake scar)
No. 3049 NVS H(3).

(1a) Amorphous cores

Excluding 4 pieces from top layers, there are some 19, large and small cores. These are quite crude and amorphous. One No. 2570 NVS, B(7) might have been used as a core-scraper.

(2) Thick core flakes (Fig. 62, 5)

There is nothing in them to describe or illustrate.

There are 21; 12 from MD. I and 9 from MD. II.

(3) Core trimmings

These are interesting, as they show how the cores were renewed or rejuvenated after they were exhausted (Fig. 62).

There are 11 in all; 10 from MD.I and 1 from MD.II.
Two are illustrated (Fig. 62, 6, 7).
No. 4155 NVS I (6)
No. 2472 NVS II X(4)

(4) Core ball (Fig. 61, 8)

There is a unique stone ball, No. 1246 of mottled reddish-green chalcedony. It is marked by minute shallow flake scars all over, evidently with the help of a sharp metal tool.

Stratigraphically it is not Chalcolithic, being found in NVS. I(3). But nothing like this has been found in the historic layers. It may have been intended to turn it into a small ball to serve as a weight or less probably

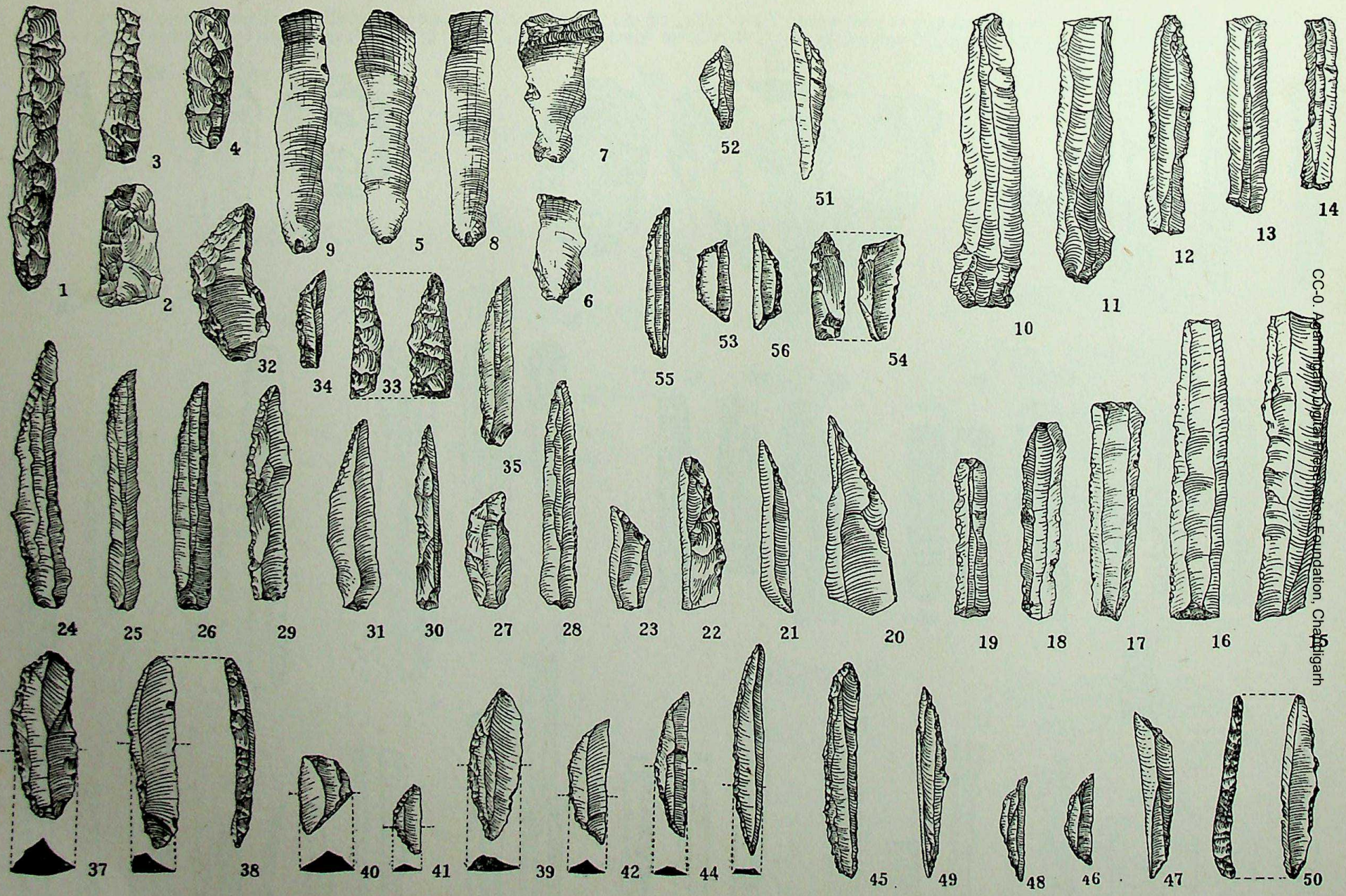

Fig. 64 : Crested Ridge Flakes (1-4) : Plunging Flakes, (5-9) ; Parallel-sided Flakes (unused), (10-14) ; Parallel-sided Flakes (used) (15-19); Pen-knife blades: (Right-sided), (20-23) ; (Left-sided), (24-27 ; 28.31 ; 32-35) ; Lunates— i. (37-44) ; ii (45-48) ; iii (49-50); Triangles (51-52) ; Trapezes, (53-56). See pp. 127-132.

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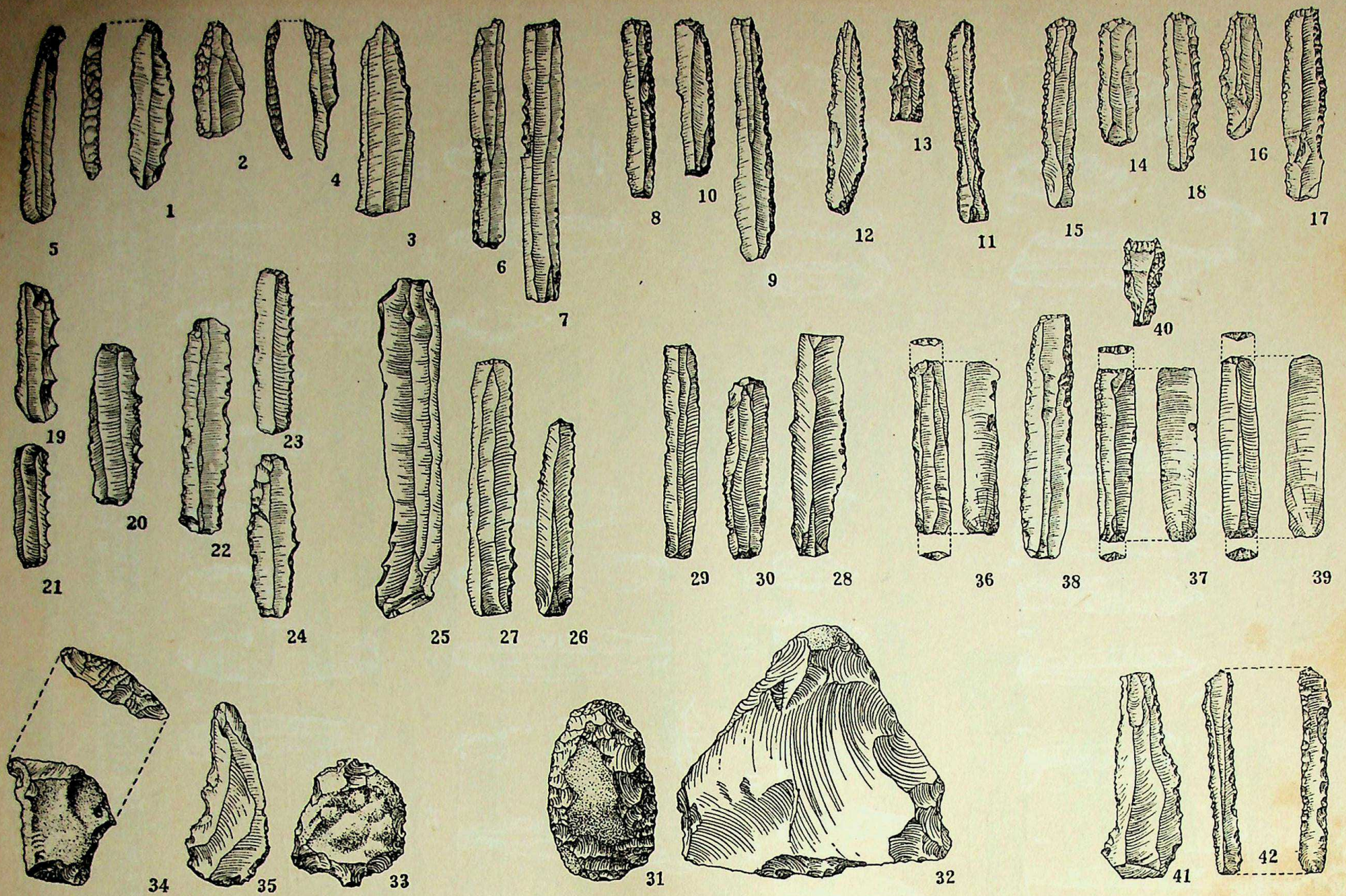

Fig. 65 : Blades with straight blunted back : i (a) (1, 2) ; (b) (3, 4) ; (c) (5). ii Partly blunted, (6, 7) ; iii. Fully blunted, (8-10) ; Blades fully retouched on both sides, (11-13) ; Straight blunted back-cum-Scraper, (14-18) ; Saws, (19-30) ; Scraper, (31-32 ; 33-35 ; 36-39) ; Blades used on both sides, (41-42). See pp. 133-139.

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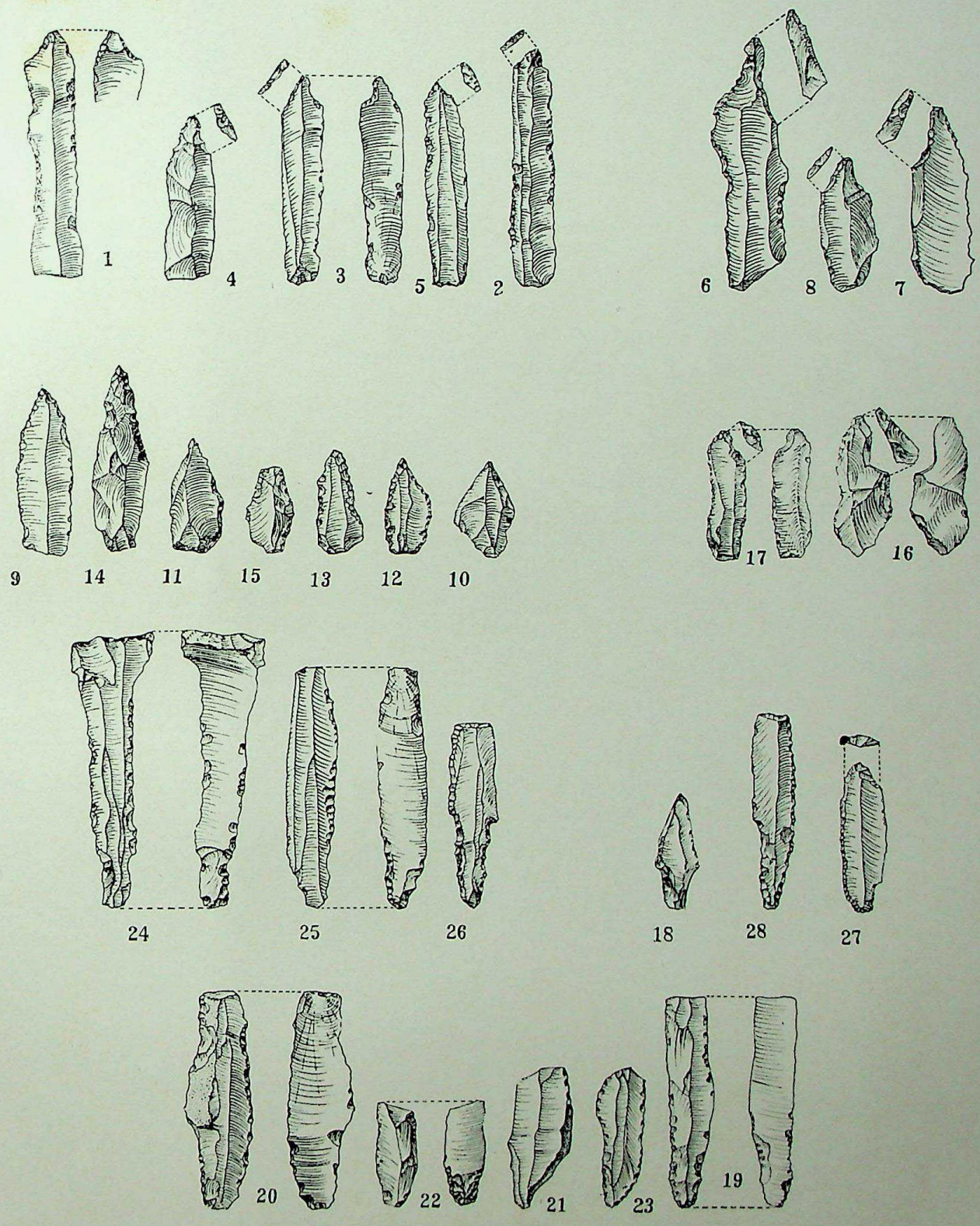

Fig. 66 : Type 17, (a) Points, (1-5) ; (b) Projecting Points, (6-8) ; (c) Triangular Points, (9-15), (d) Pointed Flakes (16-17) ; Type 18, Tanged Point, 18 ; Type 19, Tanged Flakes, (i) Broken, (19-2) (ii) Intact and worked flakes, (24-26) ; Type 20, Tanged Blade-cum-Scraper, (27-28). See pp. 134-37.

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Fig. 67 : Blades fully retouched on both sides (a-c). Straight blunted back-cum-scrapers (d-f). Tanged point (i). Tanged flakes (k-o). 2/1. Scraper-edge magnified 10 times. See pp. 134-36

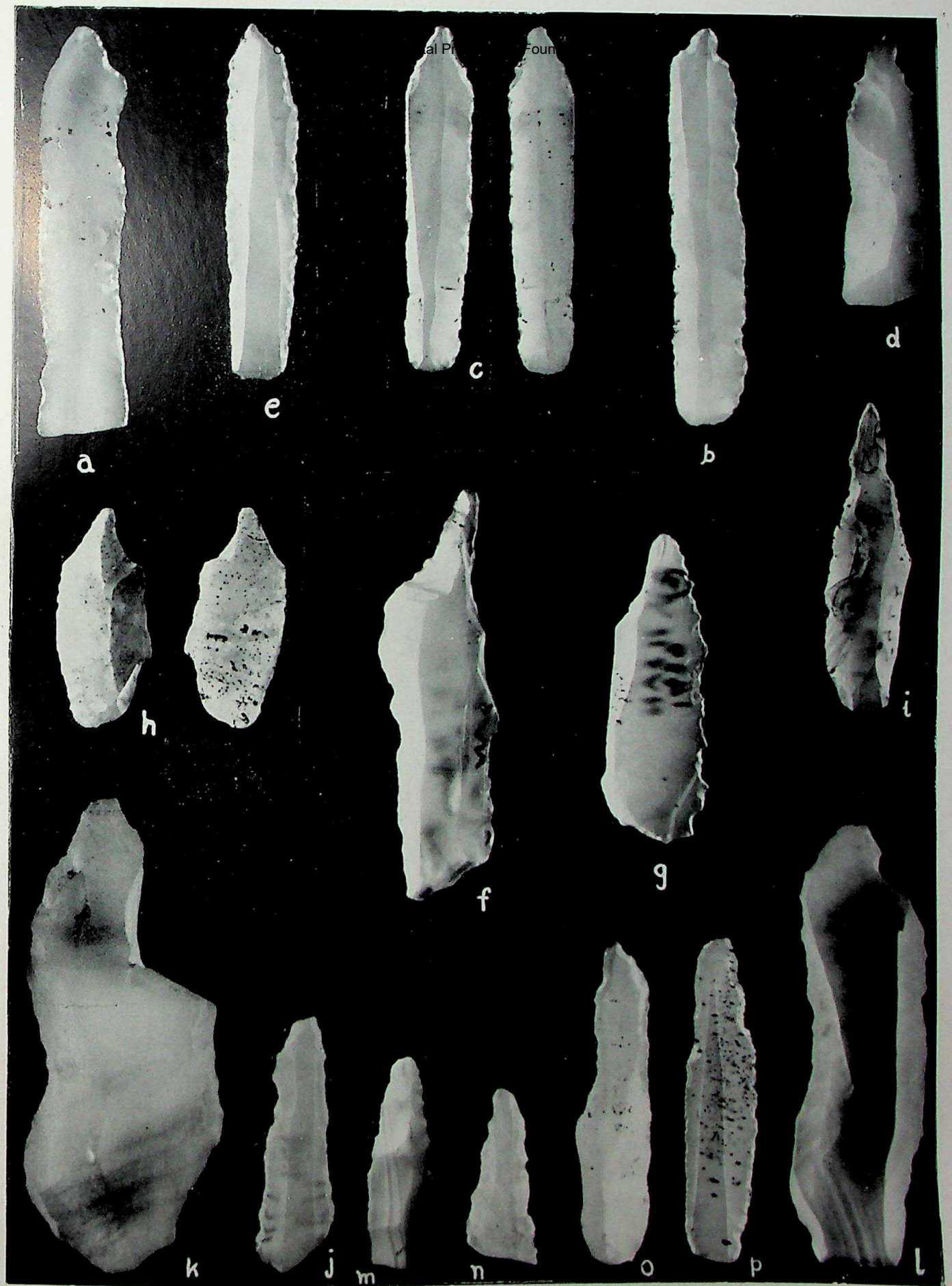

Fig. 68 : Points (2/1). See pp. 134-36.

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Fig. 69 : Saws (a-f ; j-l). Intact Tanged Flakes (m,l,h). Scrapers-on-blade (g, i) (2/1). See pp. 136-39.

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as a sling stone. It may be mentioned that a bigger stone ball of multi-coloured jasper, similarly fashioned, but not smoothed and polished and hence unfinished was found in the river bed.

(5) Amorphous thick flakes

These are only 10 in number, and may have been the by-products of primary flaking.

(6) Flakes with crested ridge (Fig. 64)

The crested ridge is due to the alternate flaking at right angles to the longer axis of the core, before the actual parallel flakes are taken out. Its purpose seems to be two fold. To serve as a guide. Secondly, it may have helped to fix the core in a slot.

There are 222 in all; 217 from MD.I and 5 from MD.II.

According to their size, they fall into:—

(*a*) Long, (*b*) Medium, and (*c*) Short,

In (*a*) there are 26.
Length 3.5 cm. to 4.7 cm.
breadth 0.6 cm. to 1.5 cm.

(*b*) has 110.
Length 2 cm. to 3 cm.
breadth 0.4 cm. to 1 cm.

(*c*) has 81.
Length below 2 cm.
breadth 0.4 cm. to 1 cm.

Some below 2 cm. are broken bits. But those above 2 cm. show that the cores were, indeed, small. Their number and size correspond well with the cores of different sizes and numbers from the excavations. Only there is no specimen even approaching the longest core, No. 685, which is 7.5 cm. in length.

The following are illustrated (Fig. 64, 1-4).

6925	NVS	G(11)
2604	NVS	C(10)
7794	NVS	F(12)
8441	NVS	F(13).

(7) Plunging Flakes (Fig. 64)

These flakes are the result of a hinge fracture, so that the flakes are thicker at one end, and have a very concave under-surface.

In all there are 179, all from MD.I. These may be grouped as:—

(*a*) Long, asymmetrical, length between 3 cm. and 4 cm.
breadth between 0.5 cm. and 1.5 cm.

(*b*) Short, asymmetrical, below 2.5 cm. in length but 0.5 and 8 cm. in breadth.

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(*c*) Short, very broad and asymmetrical; below 3 cm. in length and above 1.2 cm. in breadth.

(*d*) Symmetrical; length between 1.5 cm. and 4.5 cm. breadth above 1 cm.

The following are illustrated (Fig. 64, 5-9).

(*a*) 7516 NVS H(12)

(*b*) 2963 NVS X(4)

(*c*) 2683 NVS A(11)

(*d*) 7968 NVS F(12); 3075 NVS X(4)

PARALLEL-SIDED FLAKES

These have been classified into two categories: (i) unused, (ii) used. The main difference between the two is that in the former the edges are not indented or broken by use or retouch. In the latter the edges usually bear signs of battering. This can be easily distinguished from genuine or intentional retouch.

The large number of used parallel-sided flakes indicates that these had been used as blades. And some scholars do regard them as blades, though they bear no signs of retouch.

(8) PARALLEL-SIDED FLAKES (UNUSED) (Fig. 64)

These are 1520. According to their size—mainly length—they may be grouped into:—

(*a*) Length between 4.0 cm. and 5.0 cm. breadth between 0.5 cm. and 0.8 cm. } 60 flakes.

(*b*) Length between 3.0 cm. and 4.0 cm. breadth between 0.5 cm. and 0.8 cm. } 63 flakes.

(*c*) Length between 2.0 cm. and 3.0 cm. breadth between 0.5 cm. and 0.8 cm. } 96 flakes.

(*d*) Very small 1273.

(*e*) Broad and thick and asymmetrical 8.

The following are illustrated (Fig. 64, 10-14).

(*a*) 1165 NVS X(4)
3483 NVS B(7) agate
8132 NVS E(14)
4672 NVS D(7) banded agate
3498 NVS B(7).

(9) PARALLEL-SIDED FLAKES (USED) (Fig. 64)

As mentioned above, the edges of these flakes show signs of battering and use.

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There are 1212 in all, and according to their size—mainly length—may be grouped Into:—

(*a*) Length between 4.0 cm. and 5.5 cm. breadth between 0.5 cm. and 0.8 cm. } 31 flakes.

(*b*) Length between 3.0 cm. and 4.0 cm. breadth between 0.5 cm. and 1.0 cm. } 113 flakes.

(*c*) Length between 2.5 cm. and 3.0 cm. breadth between 0.4 cm. and 0.9 cm. } 180 flakes.

(*d*) Small, broad, thick and asymmetrical 21 flakes.

(*e*) Small flakes, mostly broken bits. below 2.5 cm. These include 45 pieces of banded agate. } 867

The following are illustrated (Fig. 64, 15-19).

(*a*) 7192 NVS F(11)
6277 NVS Y(6)

(*b*) 4408 NVS X(4)
4516 NVS X(5)

(*c*) 5749 NVS C(6)

(10) Penknife or Obliquely Blunted Blades (Fig. 64)

These long flakes with their back blunted partly or wholly and one end tapering into a point, like our penknife blades, are called " penknife blades ". These may also be regarded as obliquely blunted points or blades.

These though comparatively few—only 164 from both mounds—offer a wide variety in shape and size. They may first be divided into:—

(i) Right-sided, (ii) Left-sided.

In each of these, it is further possible to classify the tools into:—

(*a*) Blades, obliquely blunted at one end	84
(*b*) Blades, fully obliquely blunted	34
(*c*) Arrowhead-like or triangular or symmetrical	13
(*d*) Sub-triangular	1
	132

(i)(a) *Right-sided, partly obliquely retouched penknife blades*

Out of 29, 21 are intact. Of these, 7 are much broader than usual, between 0.9 cm. and 1.2 cm. in width; length between 1.9 cm. and 2.9 cm.; breadth between 0.5 cm. and 1.2 cm.

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Four are illustrated (Fig. 64, 20-23).

6375	NVS	Y(6)
2377	NVS	X(4)
4752	NVS	X(5)
2780	NVS	X(4).

There are none in i-*b*, i-*c* and i-*d*.

(ii-a). *Left-sided*

In these length varies from 0.6 cm. to 4.0 cm. the breadth from 0.5 cm. to 0.8 cm. However, there are wide variations in the obliqueness. From a gradual tapering towards the point, it at times turns abruptly.

Four specimens illustrate this (Fig. 64, 24-27).

3388	NVS	B(7)
2961	NVS	X(4)
6608	NVS	H(8)
7187	NVS	G(12).

(ii-b). *Left-sided, fully retouched, penknife blades*

These are 34 in all, including, however, some 12 broken specimens. The length of the intact specimens varies from 1.8 cm. to 3.5 cm., and the breadth from 0.3 cm. to 0.8 cm.

In almost all, there is a fine vertical retouch all along the edge of the back. This is done from the edge downwards, and not from the body of the blade towards the edge.

One of the specimens (illustrated) shows extensive use along half its working edge from the point downwards.

Two specimens are very thick and broad, and the retouch is not fine. They might belong to a pre-Chalcolithic phase, which is not yet stratigraphically well-known.

Including all these, four specimens are illustrated (Fig. 64, 32-35).

381	NVS	(details lost)
209	NVS	A(6)
4744	NVS	X(5)
2790	NVS	(details lost).

(ii-c) and (ii-d). *Left-sided, arrowhead or triangular and symmetrical penknifeblades*

Out of 13, 7 are intact. Among the latter, there are very symmetrical, like an elongated triangle, though they are essentially penknife blades, partially obliquely retouched. One is sub-triangular.

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The following are illustrated (Fig. 64, 28-31).

3074	NVS	C(11)
1008	NVS	H(12)
7756	NVS	F(12).
(ii-*d*) 4484	NVS	(details lost).

(11) Lunates or Crescents (Blades) (Fig. 64)

The number of lunates—a survival of the geometric microlith of the earlier period—is indeed very small, only 118, out of a total of 4958, that is 2.19 per cent.

These may be classified into :—

(i) Thick crescentic blades, broad and curved at both ends (with four further sub-divisions).

(ii) Thin crescentic blades, thin, flat and narrow with curved ends.

(iii) Thick or thin, small or large, but symmetrically pointed at both ends.

The specimens in (i) may be further sub-divided into :—

(i-a) Blades very thick on the arch side, and probably older, and belonging to Series II or Series III, and come here as "survivals".

(i-b) Blades thick on the arch side.

(i-c) Blades which are almost semi-circular.

(i-d) Blades which are retouched only at the ends.

(i-e) This group contains a large number. Moderately thick and pointed at both ends and fully retouched on the arch side.

In size, the length varies from 1.2 cm. to 3.6 cm. and breadth from 0.3 cm. to 1 cm.

The following 8 are illustrated (Fig. 64, 37-40, 42-44).

4403	NVS	C(9)	(Whitish agate with edge used)
4905	NVS	F(6)	(Chalcedony with edge used)
1695	NVS	X(4)	—do—
2635	NVS	A(11)	
5930	NVS	Y(6)	
3813	NVS	X(2)?	
3172	NVS	X(5)	
5300	NVS	G(12)	

(ii) *Lunate Blades,—thin, flat, narrow and curved at both ends.* There are 53 in all.

These are divisible into :—

(ii-a) Blades fully retouched (43)

(ii-b) Blades retouched at ends only (8)

The following are illustrated (Fig. 64, 45-48).

6013	NVS	I(16)
3823	NVS	B(8)
8295	NVS	F(2)
6130	NVS	I(6)

(iii) *Lunate Blades, thick or thin, small or large, but symmetrically pointed at both ends.* A small group of 13 specimens.

Two are illustrated (Fig. 64, 49-50).

7221	NVS	H(11)	
1191	NVS	Y(4)	This has a thick well-retouched back.

(12) TRIANGLES (Fig. 64)

Barring the possible triangles among lunates with ends only retouched and slightly angular, there are only two triangles. One is positively scalene, the other almost isosceles.

Both are illustrated (Fig. 64, 51-52).

8349	NVS	F(12)
3289	NVS	C(11)

(13) TRAPEZE (Fig. 64)

The same remark, as about triangles, holds good about the trapeze, Some lunates with their ends only retouched and slightly angular might be regarded as trapeze. But barring these " possibles " the real trapezes are only four.

All are illustrated (Fig. 64, 53-56).

2615	NVS	C(11)	
3407	NVS	D(11)	Very thick end of agate.
3382	NVS	A(10*a*)	Lunate-cum-trapeze.
3382*a*		Surface	Lunate-cum-trapeze.

(14) BLADES WITH STRAIGHT BLUNTED BACK (Fig. 65)

These are 168 in all, and may be classified into :—

(i). *Partly or fully blunted* and *all* (possibly) *pointed* at one end. Out of 30 specimens only six are complete. These may be further grouped into :—

(*a*) Very thick, fully blunted and pointed at one end. These have a *gloss*, and very probably belong to an *earlier* period.

Both these are illustrated (Fig. 65, 1-2).

3299	NVS	I(3)	Chalcedony
1173	NVS	I(4)	Agate

(*b*) Thin, partly or fully retouched and pointed at one end.

Two are illustrated (Fig. 65, 3-4).

3347	NVS	I(3)	
3120	NVS	I(4)	A. 10.*A*.

(*c*) Thin with rounded end. One complete specimen is illustrated. (Fig. 65, 5).

6283	NVS	Y(6)

(ii). *Partly blunted.* This is either on the right or on the left. So we have—

(*a*) Partly blunted on the right side of the butt—19.

(*b*) Partly blunted on the left side of the butt—21.

besides 21 small pieces.

Of these 61 specimens, only 10 are complete. The longest is 4.1 cm.

The following are illustrated (Figs. 65, *67*).

8328	NVS	F(12)
6858	NVS	G(11)

(iii). *Fully blunted.* There are 135, though not all complete and include small broken but fully retouched pieces.

The longest is 4.5 cm. and the smallest 2.9 cm. Three are illustrated (Fig. 65, 8-10).

3620	NVS	A(10*a*)	
7635	NVS	F(12)	
8320	NVS	F(12)	Agate.

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(15) Blades Fully Retouched on Both Sides (Figs. 65, *67*)

So far only three specimens have been found.

All these are illustrated (*Fig. 67, a, b, c* and Fig. 65, 11-13).

2977	NVS	X(4)	Very thin, long, penknife-like blade, with its tip of point broken, with steep retouch on both sides.
3981	NVS	A(10*a*)	Lunate-like, symmetrical point.
6614	NVS	G(9)	Broken piece, agate.

(16) Straight Blunted Back-cum-Scraper (Figs. 65, *67*)

So far only 5 specimens of this type of tool have been found. All these bear minute retouch at one of the shorter ends. This is in one case at the bulbar end (No. 2757), in two cases on the end opposite to the bulbar end (No. 8342, 8063), while in the remaining two, the bulb is not there.

All are illustrated (Fig. 65, 14-18 and *Fig. 67, d, e, f*).

2757	NVS	A(11)
8342	NVS	E(14)
8063	NVS	F(12)
3127	NVS	B(7)
7823	NVS	H(11)

(17) Points (Figs. 66 and *68*)

These may be classified into :

(*a*) Short, retouched, projecting points on used blades or flakes—10.

(*b*) Long, retouched, projecting points on used blades or flakes—5.

(*c*) Triangular points—9.

(*d*) Thick elongated point—1.

(*e*) Very thick chisel-like point—1.

Since these are rather rare—even unique—specimens, they are described in greater detail.

(*a*) Five specimens are illustrated. (Fig. 66, 1-5 and *Fig. 68, a-e*)

8333	NVS	F(12)	Sub-triangular point, with its sides retouched from the underside only. There is a slight shoulder on one (left) side.

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8215	NVS	G(12)	Two notches on either side of a short, sub-triangular point, making it look like a ball-pen nib.
8510	NVS	F(13)	Similar as the first one, but one side of the point retouched from the underside.
7762	NVS	E(14)	Sub-triangular point by irregular but well-marked retouches.
7500	NVS	G(12)	Short point, retouched from the underside.

(*b*) Three specimens are illustrated. (*Fig.* 66, 6-8 and *Fig. 68, f, g, h*)

8436	NVS	F(11)	Beak-like elongated point.
1439	NVS	Y(3)	Similar to above, but the point is slightly smaller. The back-side is thick and purposely partly blunted.
7442	NVS	B(14)	Short thick point, one side by possibly a burin-like vertical stroke.

All these are highly glossy and hence are probably older.

(*c*) Out of 9 specimens illustrated, 7 are drawings and two are photographs. (Fig. 66, 9-15 and *Fig. 68, i-j*).

These are small, 4 very symmetrical pieces, triangular or elongated pear-shaped with the point intentionally made by retouch, or meant to be so used, and the butt end is retouched or has a small waist on one or both sides.

3152	NVS	D(9)	Longest of the triangular points, retouched on both sides at the tips.
7328	NVS	F(11)	Small triangular point with a small tanged or waisted butt.
4311	NVS	—(9)	Small point with a retouched butt, broken at the tip,
2490	NVS	A(14)	Small point with retouch on either side of the tip.
2776	NVS	X(4)	Possibly part of a large blade having half of its front retouched on both sides into a point.
5422	NVS	X(5)	A point on a crested ridge flake.
243	NVS	(1*a*)	Simple unretouched point-like flake.

(*d* & *e*) These two might be just thick pointed flakes and not really tools. But though crude and irregular, they show not only signs of use on their edges, but also an attempt to fashion a burin-like broad point. (Fig. 66,16-17 and *Fig. 68, k, l*)

2804	NVS	B(7)	Very thick flake, slightly retouched on one side at the point, and also on the underside at the butt. The point itself seems to be the result of a deliberate vertical blow. If so, it is an unfinished burin.

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8086	NVS	H(12)	Another very thick flake having one of its sides used, the other retouched. The point achieved by a vertical blow as in a burin, then further retouched.

Both these burin-like tools, though well stratified, have a peculiar gloss which is seen in earlier Series II tools, in this deposit, and might in fact belong to that period.

(18) Tanged Point (Fig. 66, 18 and *Fig. 67, i*)

A definite instance of a tanged point is provided by 6533 NVS I(6). It is a beautiful specimen. The body of the point is elongated, whereas the tang is fairly long, and retouched on one side.

(19) Tanged Flakes (Fig. 66 and *Fig. 67*)

A tanged point was described above. Besides, there are 10 specimens in the 12, of which the front portion of the tool is broken, so it is difficult to say whether these were points or penknife blades or mere flakes—as the remaining eight are. But every one of them has fairly well retouched butt, suggesting the definite existence of tanged tools in the Chalcolithic industry of Nevasa. (Fig. 66, 19-23 and *Fig. 67, k, l, m, n, o*).

(i). *Broken*

7920 5353	NVS NVS	H(11) Y(6)	All have an elongated tang, retouched either on the top or the underside.
6042	NVS	Y(6)	Anterior as well as posterior of the butt broken.
2477	NVS	A(11)	The front and the tang broken; retouched on the underside of the tang.
7381	NVS	G(12)	Finely retouched tang, front broken.

(ii). *Intact worked flakes* (*Fig. 69, m, l, h* and Fig. 66, 24-26).

Of these two are very interesting.

8444 6952	NVS, NVS,	F(13) F(11)	Plunging flake with a waist having retouch on either side. Retouched tang ends in a dull point.
7052	NVS,	H(11)	In this nearly half is like a tang, and retouched on both sides, which is carried further along on one side. The other end is steeply retouched, thus making it an "End Scraper".

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(20) TANGED BLADE-CUM-END SCRAPER (Fig. 66, 27-28 and *Fig. 69*)

3845	NVS	A(10*a*)	This is indeed a unique specimen. A small flake, has a neatly retouched, slightly thicker side, making it a "blunted back blade". But in addition the front—point—is beautifully retouched, giving it a scraping edge. Further there is a tang (partly broken) but having a waist and worked on both edges.
7697	NVS	F(12)	is a unique specimen having one side fully retouched, and in addition has a tang and steep scraper edge on the opposite end.

(21) SAWS OR BLADES WITH SERRATED EDGE (*Fig. 69* and Fig. 65)

These may be divided into four groups as follows :

(i) True saws (full) with well spaced teeth—8.

(ii) True saws (full) with closely set teeth—19.

(iii) True saws (half or partial)—24.

(iv) Saw-like.

In (i) there are only eight specimens. Of these three are illustrated though no two specimens are quite identical. (Fig. 65, 19-21 and *Fig. 69, a-f*).

3098	NVS	X(4)	The teeth are made with big semi-circular dentitions.
3643	NVS	X(5)	The teeth are well spaced, but two are made by oblique cuts.
6027	NVS	Y(6)	The teeth are well placed and though small, are regular and prominent.

In (ii) there are 19 specimens, of which three are illustrated. (Fig. 65, 22-24).

6881	NVS	G(11)	The teeth are comparatively close and regular.
8280	NVS	F(12)	The teeth are comparatively close and regular.
2988	NVS	X(4)	One of the teeth is very prominent.

(iii) Including some broken specimens, there are 24 in this group. The important feature is that indentations are confined only to a part of the length of the blade. Whether it is accidental or intentional, it

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is impossible to say. Hence the specimens are grouped in a separate category. The following three are illustrated. (Fig. 65, 25-27).

5199	NVS	I(6)	Three oblique teeth near the pointed end.
2976	NVS	I.X(4)	A few teeth on one side.
4355	NVS	A(9)	A few teeth near the butt end on one side.

Saw-like

(iv) This is a comparatively small group. The line of distinction between this and the used blades is very thin. In some specimens, as here illustrated, one side bears definitely used marks. For the other the dentitions are not well marked nor is it possible to regard the retouched surface as indicative of " backed blade ". Hence the term " Saw-like ". (*Fig. 69, j, k, l* and Fig. 65, 28-30).

7162	NVS	F(11)
8380	NVS	E(13)
2985	NVS	A(10)

(22) Scrapers (Figs. 65, 66, *67*, *69*)

The excavations yielded a few large core flakes; some of these have their edges steeply retouched. Hence such pieces have been included among scrapers here. It is possible that all of these do not belong to this industry; they might as well form a part of Series II or the Middle-Late Palaeolithic Culture in the region. Those which were found in the uppermost layers have been kept away. But those which came from the Chalcolithic layers have been carefully examined, and after a scrutiny, have been included here as ' scrapers ' belonging to Chalcolithic Industry.

Out of the 14 specimens, the following five seem to be Chalcolithic. (Fig. 65, 31-32.)

(A)

7071	NVS	F(11)	Steep-ended scraper on a very large and thick chalcedony crescentine flake.
5359	NVS	Y(6)	Broad scraper edge on a thick triangular greenish chalcedony slab.

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(B) Chalcolithic or earlier. (Fig. 65, 33-35).

8321	NVS	E(14)	Steep-ended flat based discoid scraper.
7414	NVS	E(14)	Similar but roughly rectangular and pointed (as in Series II scrapers).
5565	NVS	G(7)	Large thick blade or a side scraper on a chalcedony Levallois flake.

(C) *End Scrapers on parallel-sided blades* (Fig. 65).

Already under (20) reference was made to a " Tanged blade-cum-scraper ". Here are discussed parallel-sided blades which have a minute retouch on (*a*) one end, (*b*) both ends, (*c*) on the under-side. This is also a novel feature in the Chalcolithic Blade Industry. It has also been observed at Navdatoli in 1957-59 excavations.

In (*a*) there are 8

(*b*) there are 27

(*c*) there are 3, while three are broken at one end.

Large number (broken) 92

130

The following are illustrated (Fig. 65, 36-39).

2788	NVS	I(4)	The end opposite the bulb is retouched.
3099	NVS	I(10*a*)	Both ends retouched.
8463	NVS	F(13)	Retouched on the underside near the bulb, and on the upper opposite the bulb.

(23) There are a few flakes or parallel-sided blades which be a definite signs of use on both sides. Including some broken (19) and thick or thin flakes, there are in all 44. A specimen of each of the intact type is illustrated. (Fig. 65, 41-42).

2546	NVS	B(7)
2778	NVS	X(4)

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Trench A—Mound I

Layer	Cores Crude	Cores Fluted	Primary Flakes	Tanged Flakes	Para-llel sided flakes	Plun-ging flakes	Straight blunted back blades	Penknife or Obli-quely blunted blades	Lunates	Tri-angles	Trapeze	Saw-like blades	Used parallel sided flakes	Scrapers	Flakes with crested ridges	Borer or Point	Both sides used	Remarks
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX
1		4										2		2				
1a		1	1										1					
2			4										1	2				
3		1												3				
6			2					1								1		
7		1	6											2				
8		4	19				1					1	9	3	1	1		
9		10	72		55	1	3	2	2			3	31	3	8	3		
10		18	42		20	1	3	3				1	22	4	3	1		
10a		13	20		153	4	18	8				2	74	3	9	3		
11		2	15			1	3	1	1				2	1	2	2		
		54	191		228	7	28	15	3			9	140	23	23	11		

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Trench B—Mound I

Layer	Cores Crude	Cores Fluted	Primary Flakes	Tanged Flakes	Parallel sided flakes	Plunging flakes	Straight blunted back blades	Penknife or Obliquely blunted blades	Lunates	Triangles	Trapeze	Saw-like blades	Used parallel sided flakes	Scrapers	Flakes with crested ridges	Borer or Point	Both sides used	Remarks
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	X VII	XVIII	XIX
1														1				
1a			1															
2		1	2						1					2				
3																1		
5			2		5				1					2			3	
6		8	68		29		2	2					16	2	1		1	
7		7	17		36		9	3	2			3	24	2	7		3	
8		2	14		14		2	1	1					1				
9		6	9		35		3	1	1				17				1	
10													1					
		24	113		119		16	7	6			3	58	10	8	1	8	

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Trench C—Mound I

Layer	Cores Crude	Cores Fluted	Primary Flakes	Tanged Flakes	Parallel sided flakes	Plunging flakes	Straight blunted back blades	Penknife or Obliquely blunted blades	Lunates	Triangles	Trapeze	Saw-like blades	Used parallel sided flakes	Scrapers	Flakes with crested ridges	Borer or Point	Both sides used	Remarks
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX
1		4												3				
2		1			3		1					1		2			4	
3		1											1					
5		1	2														2	
7			4		1								3	2	1		3	
8		2	36		16		2					2	24	1	4	1	1	
9		6	86		51	1	8	2	2			1	12		11			
10		4	49		54v	1	4	3	6		1	2	22	3	13			
11		3	12		38	1	4	5	2				2					
12			2										1					
13					1		1	1										
		22	191		164	3	20	11	10		1	6	65	11	29	1	10	

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Trench D—Mound 1

Layer	Cores Crude	Cores Fluted	Primary Flakes	Tanged Flakes	Parallel sided flakes	Plunging flakes	Straight blunted back blades	Penknife or Obliquely blunted blades	Lunates	Triangles	Trapeze	Saw-like blades	Used parallel sided flakes	Scrapers	Flakes with crested ridges	Borer or Point	Both sides used	Remarks
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX
1		3	2															
1a			6															
2		1			2										1	1	1	
3																1		
5					2													
6			11		8			2						2	1			
7		8	10		35		4	1	4			2	16		7			
8		3	7		7		1		1				8					
9		1	13		14		1	3	1			2	8			1		
10		3	4		9		2	1					2			1		
11		2	9				2				1			3	3			
12		4	12		14	1	7						5	1	2			
		25	74		81	1	17	7	6		1	4	39	6	14	4	1	

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Trench E—Mound I

Layer	Cores Crude	Cores Fluted	Primary Flakes	Tanged Flakes	Para-llel sided flakes	Plun-ging flakes	Straight blunted back blades	Penknife or Obli-quely blunted blades	Lunates	Tri-angles	Trapeze	Saw-like blades	Used parallel sided flakes	Scrapers	Flakes with crested ridges	Borer or Point	Both sides used	Remarks
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX
1			73									4	72			1	1	
1a															1			
2		1										1						
3		1										1		2				
4		1	1				1		1									
7			3											2				
9		1	1											1				
10			1												1			
11						1												
12		1	1		1	1					1	26			2	1		
13		3	9	1								3	171	5	17	3		
14		17	17	3	98	17	6	10	3									
		25	108	4	99	19	7	10	4		1	35	243	10	21	5	1	

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Trench F—Mound I

Layer	Cores Crude	Cores Fluted	Primary Flakes	Tanged Flakes	Para-llel sided flakes	Plun-ging flakes	Straight blunted back blades	Penknife or Obli-quely blunted blades	Lunates	Tri-angles	Trapeze	Saw-like blades	Used parallel sided flakes	Scrapers	Flakes with crested ridges	Borer or Point	Both sides used	Remarks
1	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX
1			1		1											1		
2	1		3										2	1	1		1	
3			1															
4		3			1								2	1				
5		1											2					
6					1				1				2					
7		1			2								5	1				
8		5						2				1	4	1				
9		1		1	2			2	1				7					
10	1		1	2									12			1		
11	1	8	3	2	24	1	5	3	5			8	43	1		1		
12	3	15	11		69	34	15	14	14	1	1	11	99	1	19			
13		3	4	1	27	9	5	4	2			7	17	3	7	3		
14			1															
	6	37	25	6	127	44	25	25	23	1	1	27	193	8	27	6	1	

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Trench G—Mound I

Layer	Cores Crude	Cores Fluted	Primary Flakes	Tanged Flakes	Parallel sided flakes	Plunging flakes	Straight blunted back blades	Penknife or Obliquely blunted blades	Lunates	Triangles	Trapeze	Saw-like blades	Used parallel sided flakes	Scrapers	Flakes with crested ridgse	Borer or Point	Both sides used	Remarks
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX
1			40															
1a		1																
2		5	2					1				4		2				
3		2						1										
4		2										1						
5												1						
6																		
7		1	1						1			4		2				
8			2						1			4						
9		1	2		1		1					4						
10		2			3							2						
11		10	3		13	6	2	2	4			1	26		2			
12		6	11		10	9		5	3			2	23		4			
13		2										3						
		32	61		27	15	3	9	9			26	49	4	6			

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PERIOD III—THE CHALCOLITHIC BLADE INDUSTRY

Trench H—Mound I

Layer	Cores Crude	Cores Fluted	Primary Flakes	Tanged Flakes	Parallel sided flakes	Plunging flakes	Straight blunted back blades	Penknife or Obliquely blunted blades	Lunates	Triangles	Trapeze	Saw-like blades	Used parallel sided flakes	Scrapers	Flakes with crested ridges	Borer or Point	Both sides used	Remarks
	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX
1		1					1											
1a		1			1									1			1	
2													1	2	1		1	
3		1	1		1									4			2	
4					1								1					
5					2												1	
6		1					1											
7																		
8			1		8	1		3				1	5	1		1		
9		1	1		6	1							2		1			
10		2						1										
11		4	5		15	3	6	5	2			2	10	1	3	3		
12		2			2	2	5	5	4			5	28	1	8	1		
13		4			7		1	1	1			1	4	1	1			
		17	8		41	7	14	15	7			9	51	11	14	5	5	

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Trench I—Mound I

Layer	Cores Crude	Cores Fluted	Primary Flakes	Tanged Flakes	Para-llel sided flakes	Plun-ging flakes	Straight blunted back blades	Penknife or Obli-quely blunted blades	Lunates	Tri-angles	Trapeze	Saw-like blades	Used parallel sided flakes	Scrapers	Flakes with crested ridges	Borer or Point	Both sides used	Remarks
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX
1							1							2				
2							2	1					5	4	1		2	
3		2	2		7		1					1	3					
4		2	1		5		2					1	9	1	1			
5		8	15		33	7	3	3	1			2	47	2	3			
6	1	36	22	1	126	17	13	18	19			9	166	6	14		4	
	1	48	40	1	171	24	22	22	20			13	230	15	19		6	

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Trench X—Mound II

Layer	Cores Crude	Cores Fluted	Primary Flakes	Tanged Flakes	Para-llel sided flakes	Plun-ging flakes	Straight blunted back blades	Penknife or Obli-quely blunted blades	Lunates	Tri-angles	Trapeze	Saw-like blades	Used parallel sided flakes	Scrapers	Flakes with crested ridges	Borer or Point	Both sides used	Remarks
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX
1a														1				
1														2				
2														1				
3												1		1		1		
4		6	4		14		7	4	3			4	15	5		1		
5		4	2		10		2	3	3				14	1	3	3		
6																		
		10	6		24		9	7	6			5	29	11	3	5		

Trench Y—Mound II

Layer	Cores Crude	Cores Fluted	Primary Flakes	Tanged Flakes	Para-llel sided flakes	Plun-ging flakes	Straight blunted back blades	Penknife or Obli-quely blunted blades	Lunates	Tri-angles	Trapeze	Saw-like blades	Used parallel sided flakes	Scrapers	Flakes with crested ridges	Borer or Point	Both sides used	Remarks
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX
1a		1												1				
1		2																
2			1											3				
3					1							1	3	5		1	2	
4		2	5									2		6				
5		4	3		8			1	1			4	12	4	2			
6		17	13		102	2	8	8	4			15	62	2	15	12	1	
		26	22		111	2	8	9	5			22	77	21	17	13	3	

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VII

POLISHED STONE AXE INDUSTRY

Features

A remarkable feature of the Nevasa Chalcolithic period is not only the existence of polished axes, but small " workshops " or " factories " for their manufacture. These indicate that the axes and other tools found from the historic as well as the Chalcolithic layers are not chance occurrences or imports from the purely Neolithic Cultures, but played an important part in the daily life of the people. These, therefore, were manufactured on the site, like the blade tools and weapons of a microlithic character from chalcedony.

Distribution

Later exploration and excavation in the Deccan have confirmed this view. For polished celts in different stages of manufacture along with debitage have been found at Chandoli,[1] near Poona, several sites in the Bijapur District,[2] and recently in the excavation at Daimabad,[3] near Belapur, as they had been noticed at Brahmagiri.[4] Future work is sure to bring to light many more sites in the Deccan as well as in Karnatak. Such a wide distribution of the tools as well as the associated flakes implies a definite place of this industry in the Chalcolithic Culture. What is it due to? or what does it signify? Does it signify that the Chalcolithic Culture with its painted pottery and blade industry came from the north and mposed itself upon the existing Neolithic Culture of the region or does it signify the adoption of the earlier tool tradition by the copper-users, because copper was scarce? So far no clear stratigraphical evidence is available for the first hypothesis. Even at Brahmagiri, the story is the same.[6] The evidence from Sangakallu[7] is too fragmentary, and needs to be considerably amplified. But the existence of numerous polished axe sites

1. *I.A.R.*, 1957-58, p. 67
2. *Ibid.*, 1958-59, p. 33.
3. *Ibid.*, p. 15.
4. *A.I.*, No. 4, (1947), p. 245.
5. A site is reported at T. Narasipur in the Mysore District where preliminary work has already given this and other Chalcolithic pottery, in Period I. *I.A.R.*, 1958-59. p. 33.
6. *A.I.*, No. 4, (1947), p. 202; See also KRISHNASWAMI, V.D., *op. cit.*, pp. 147-48.
7. SUBBARAO, Bendapudi, *Stone Age Cultures of Bellary* (Poona, 1948).

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with dykes and rocks with grooves in Andhra and eastern Karnatak[8] suggests that the true focus of the purely Neolithic probably lies here. And it is from here that the Chalcolithic people seemed to have derived their knowledge of the polished stone tools, though a pre-existing knowledge of it cannot be ruled out, if these cultures are derived from Western Asia,[9] where such tools are found in association with the Copper and Bronze cultures. At Nevasa and elsewhere in the region (see map, Fig. 43) the tools were made of olivine dolerite,[10] which occurs as a dyke in the regular rock formation.

"*Factories*"

Besides the four 'factories' consisting of anvils, hammerstones, incomplete celts or adzes, several anvils, hammerstones, and four celts and one adze were found loose in the Chalcolithic layers, whereas one chisel was found in the historic layers. Of these few fully finished tools, the finest are the pointed butt axe, the adze, and the chisel. The factories are first briefly described, and then follows a full description of the more important types of tools.

Factory C (Fig. 71)

As the plan shows not only it is the most compact, but fairly representative consisting of an anvil of coarse basalt, a hammerstone with battering marks and a flat hand-hold, a small celt in the first stage of manufacture, a more finished tool, a chert flake and other stray stones.

This factory was the first to be located at a depth of 5 ft. 4 in. BD. (below datum) 4, that is 20 ft. 4 ins. in layer (8) weathered layer? which forms the base of the lime and hemp floor of the earliest historical period (Period IV).

The second important factory was noticed in Trench E in 1955-56. It consisted of a large flat quern, one round sling stone-like ball of trap, two round hammerstones with battered whitish surfaces (the material is a silicious nodule from sub-soil) a hammerstone of dolerite, (as in C), and another heavier and larger hammerstone of the same material, but with only a few battered marks.

8. One rock with grooves for polishing was noticed by me at Bilgi. See *I.A.R.*, 1955-56, p. 5.
9. For a different view See the Chapter "Contracts and Correlation" p. 504.
10. For the exact identification I am indebted to Professor K. V. KELKAR of the Fergusson College, Poona.

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Trench E, BD. 3, 4 ft. 11 in. at the junction of layer (13) and (14), that is below the weathered layer.

Another factory was exposed in Trench H. It comprises one very large, flat quern of coarse trap, one smaller one (this may be a plano-convex rubber or muller), and twelve round hammerstones or fabricators. Four of these are of trap and eight of impure cherty quartz. The surfaces of all have become coarse, and have at times chips removed by constant use, excepting in those areas which have remained unused, as they were protected by the hand.

A fourth factory was located in Trench Y. This included a fairly large quern, with flat used surface but keel-shaped bottom, a plano-convex rubber, four fabricators (3 quartz, 1 of trap), one very small ovoid pebble of trap, two dolerite flakes, one large cherty flake (prepared probably for turning it into a semi-circular scraper), and one broken, polished stone axe of dolerite.

A few representative elements of each are described in detail and illustrated.

Polished Stone Axes (Fig. *70* and 72)

In all only five axes were found. As at Brahmagiri, they may be broadly grouped into :

A, axes with lenticular or flattened lenticular section, and pointed butt.

B, axes with ovoid section, and pointed butt.

C, axes with ovoid section, and probably with a butt which might, when or if finished, would be square.

Their detailed descriptions are as follows :—

4012	NVS	S(10*a*)	Lying *in situ* above the layer sealing the huge storage jar.(Fig. *70*, *1* ; 72, 1).
	Type A.		Triangular axe, underside flat, upper slightly bulging out, where it slopes down to the edge. Smooth and polished all over, but completely on either side of the edge, whereas on the rest of the body, a few scars and slightly coarser surface remain. Section lenticular. (Cf. A iii. Brahmagiri). Almost a perfect specimen.

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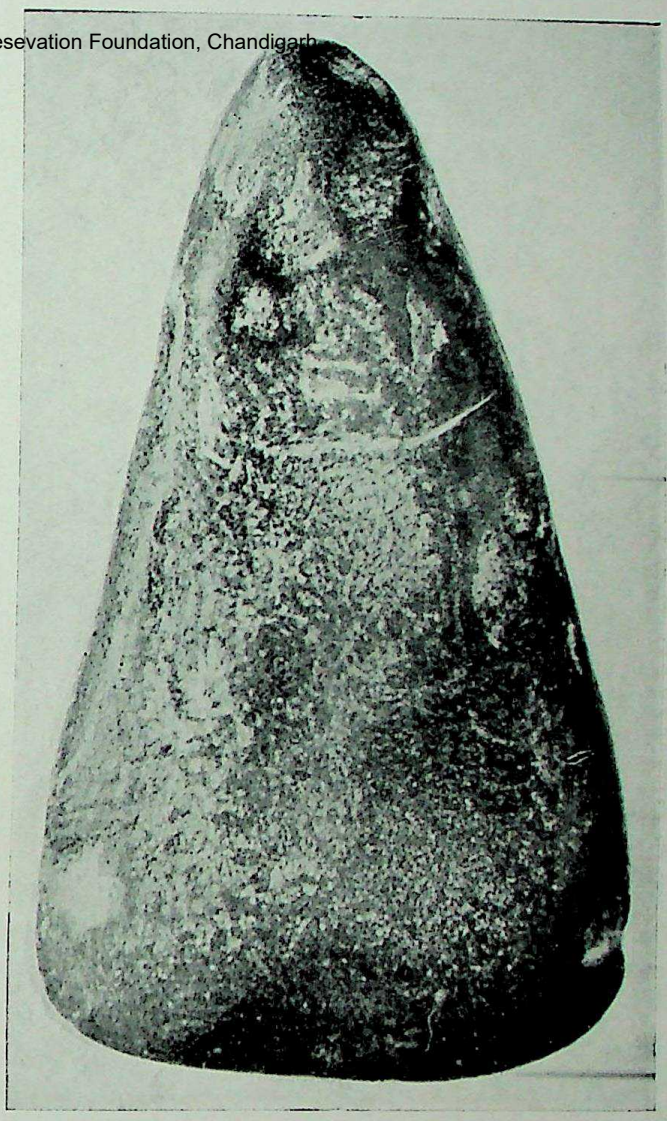
3



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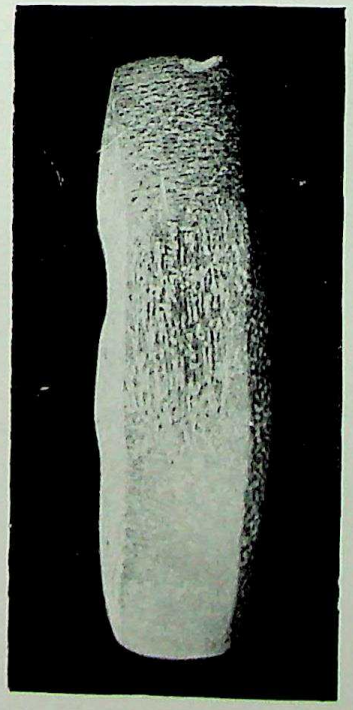

4

2

5

Fig. 70 : Polished Stone Axes (1-3) ; Chisel (4), Adze (5). See pp. 152, 155, 157-58.

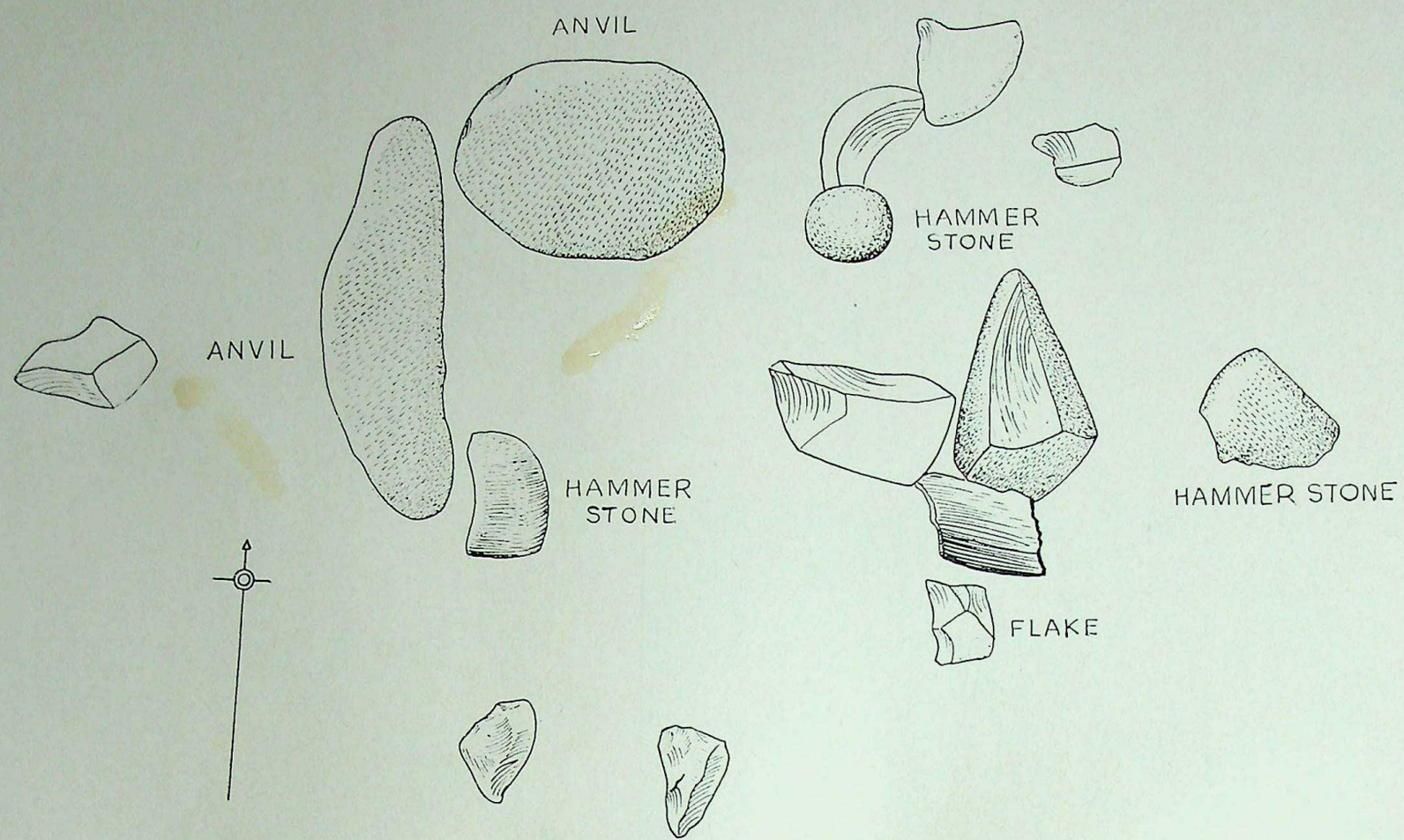

Fig. 71 : Plan showing the position of Anvil, Hammerstones and Polished Stone Celt. *See p. 151.*

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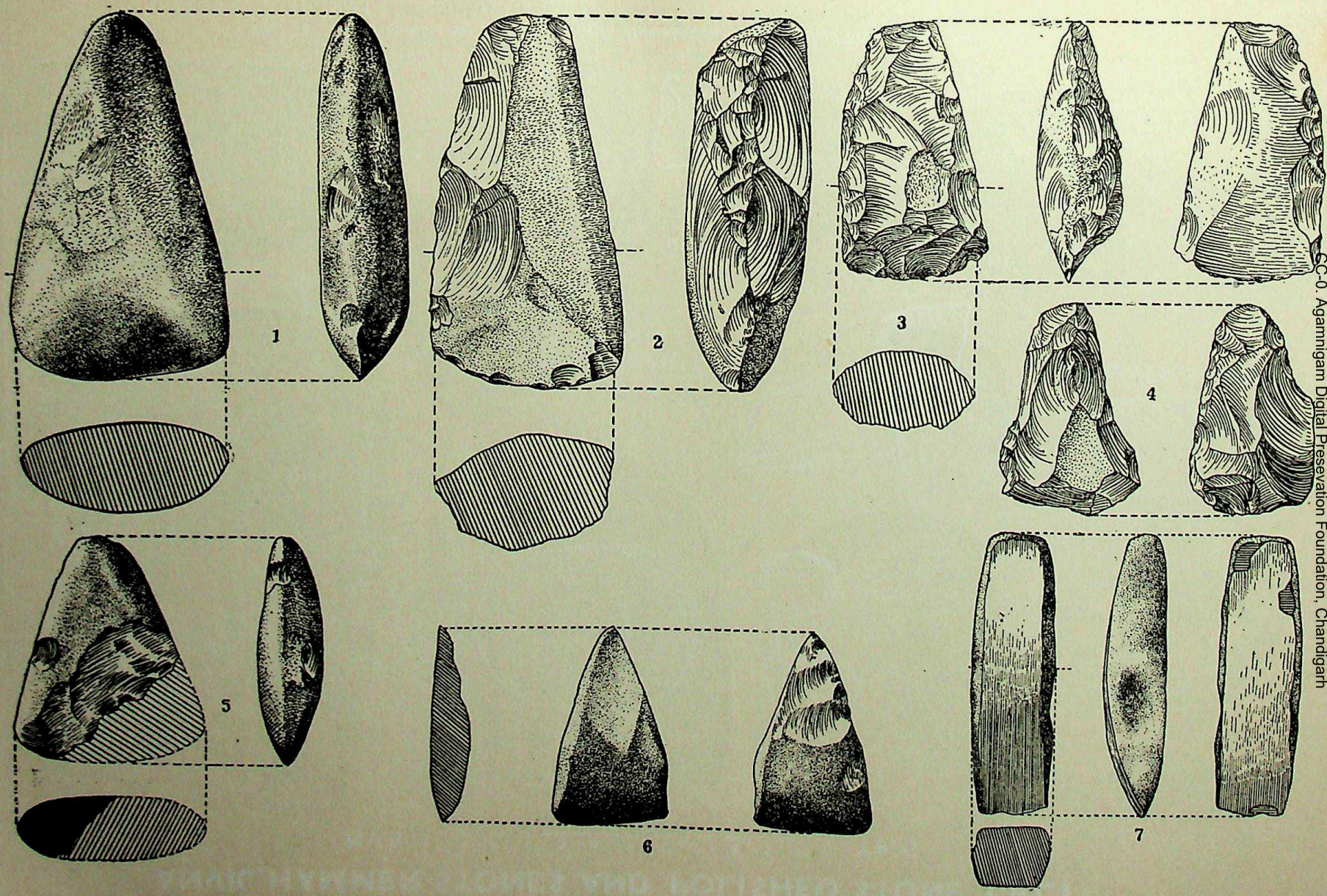

Fig. 72 : Polished Stone Tools. Fully Polished Axes, (1, 5) ; Partly Polished, (2, 3) ; Incomplete (first stage) (4) ; Adze (6) ; Chisel (7). See pp. 152, 157-58.

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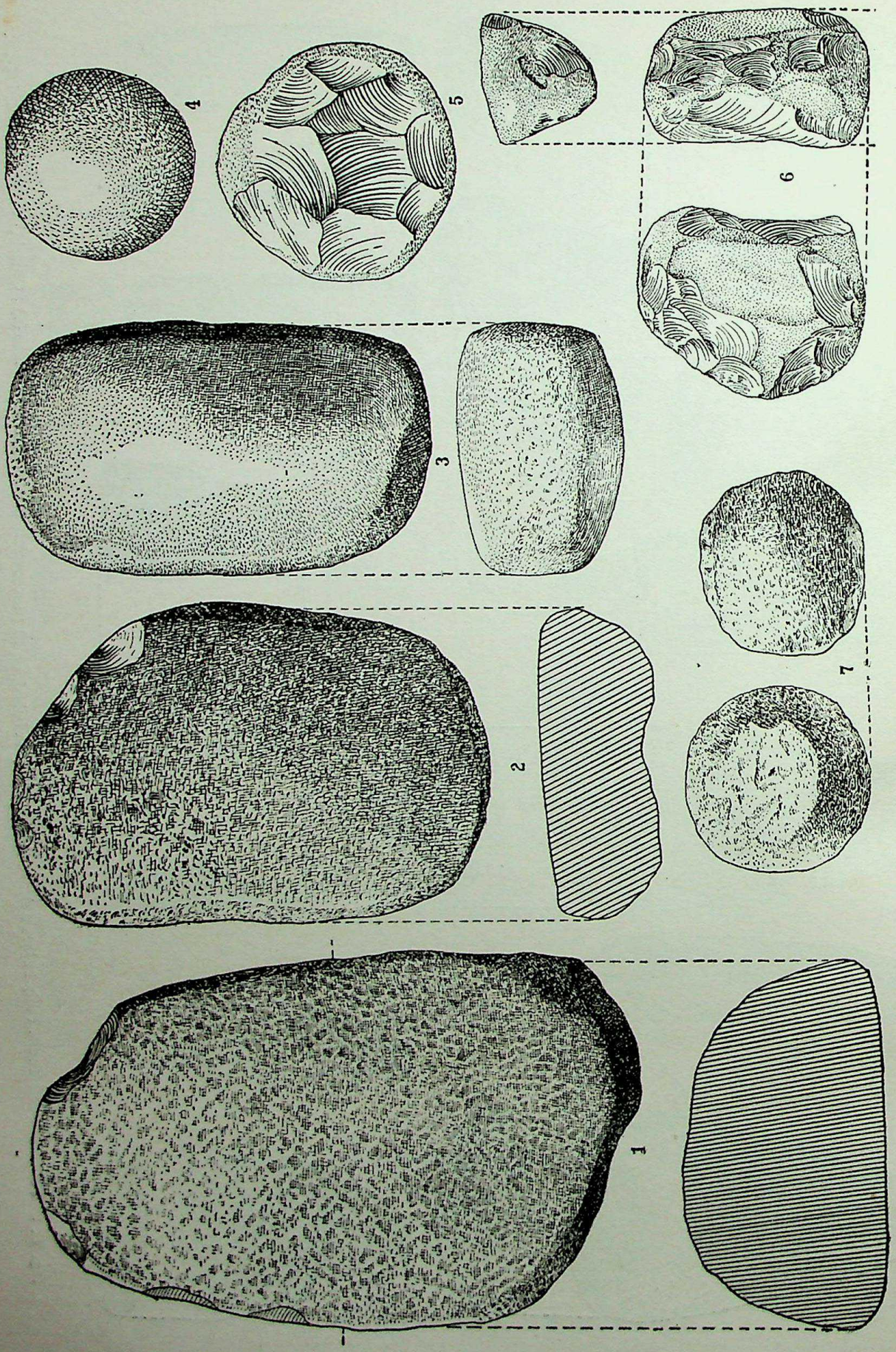

Fig. 73 : Anvils (1-2) ; Muller (3) ; Stone Ball (4) ; Hammerstones (5-7). (½) See pp. 160-61.

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ALLCHIN thinks that "such regularity of finish and general shapeliness must be regarded as of ceremonial importance".[11] 12.7 cm. × 7.5 cm. × 2.8 cm.

6164 NVS Y(6) From the "factory".

Type Ai — Small triangular axe, broken across the edge, Section lenticular. (Cf. Type Ai. Brahmagiri). Pointed butt, smoothed over on both sides, and even partly polished on the under at the butt end, near the broken surface. Two small scars on the upper surface as well. About 8 cm. × 5.5 cm. × 2 cm. (Fig. 72, 5)

Type B. — Small triangular axe, with almost parallel sides, and then suddenly ending in a point which is now broken; one side is fully ground and polished, though the edges on one side and the whole of the under side has remained in the second stage of preparation with zigzag flake scars. Section ovoid. (Cf. Type Bia Brahmagiri) 9 cm. × 5 cm. × 2.8 cm. (*Fig. 70, 2* and Fig. 72, 3)

8030 NVS F(12)

Type C. — Triangular or sub-triangular axe, with gently tapering sides, almost an ovoid section. (Cf. Type B ii Brahmagiri), and probably a squarish butt. Certain parts fully ground and polished. 13 cm. × 6.8 cm. × 3.5 cm. (Fig. 72, 2 and *Fig. 70, 0*)

2274 NVS C(9) From the 'Factory C'.
The last one is an incomplete small triangular axe of the pointed butt type, in the first stage of preparation. It is flat on the underside, the upper has a medial ridge. 7.5 cm. × 4.5 cm. × 4.4 cm. (Fig. 72, 4).

These few axes resemble the Brahmagiri more closely than those from Sangankallu, where a wider variety of axes are found.

POLISHED STONE ADZE (*Fig. 70, 5* and Fig. 72, 6)

Only one adze was found from the site, as at Brahmagiri. These are comparatively rare even in the classic Polished Stone areas like Bellary.[12]

6749 NVS F(12) The adze is triangular, having a sharp point and edge. Section parallelogrammatic. Almost half of the body (lower) is polished on both sides; the sides are ground, but not fully. While making the edge, both the sides taper, but the one—here called under—has a fine bevel, as in the adze from Sangankallu.[13]

11. ALLCHIN, F.R. "The Neolithic Stone Industry of North Karnataka Region, *BSOAS.*, Vol. XIX (1957), p. 329.
12. SUBBARAO, *op. cit.*, pp. 33-34.
13. *Ibid.*, p. 35, An adze has been reported from Brahmagiri but its description or the drawing does not show this fine bevelling.

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POLISHED STONE CHISEL (*Fig. 70, 4* and Fig. 72, 7)

A solitary chisel was found, not in the Chalcolithic layers, but in the historic (Period V). However, since the site has given us such excellent stratigraphic evidence of the use and the presence of such industry on the site, this single piece, out of proper context, should be taken as belonging to the Chalcolithic period and brought up later.

4360 NVS H(4) The chisel is rectangular, with a thick tapering butt, and straight bevelled edge. The two sides which form the edge are finely ground and polished, whereas the sides are only partly smoothed. But of the former, the underside is flat, and the upper rounded. Section: Quadrilateral. 10.2 cm. × 2.4 cm.

Chisels, though a part of the assemblage of Polished Stone Axe and Neolithic culture, are not always found with the axes or celts. FOOTE[14] had noted a few from the districts of Anantpur,[15] Kurnool,[16] and two sites in the former Hyderabad State.[17] These he classified into six types[18] at follows :—

1 Chisel with square body,

2 Chisel with cross cut edge and very thick body.

3 Chisel with thick triangular body.

4 Chisel with narrow thin body.

5 Chisel with broad elliptical edge.

6 Chisel with sharp point.

SUBBARAO[19] has, however, pointed out that FOOTE made no distinction between a chisel and a pick, and says further that " the pick, used for digging and piercing operations has a pointed working end, and is

14. FOOTE, Robert Bruce. *Indian Prehistoric and Proto-Historic Antiquities, Notes on their Ages and Distribution*, pp. 99, 102.
15. *Ibid.*, pp. 99, 102.
16. *Ibid.*, p. 117.
17. *Ibid.*, p. 124, Even in the collections from British Museum, London and Pitt Rivers Museum, Oxford, there are only 4 and 6 chisels respectively. See ALLCHIN, *op. cit.*, p. 327.
18. *Ibid.*, p. 21.
19. SUBBARAO, *op. cit.*, pp. 37-38.

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generally chipped, while the chisel has a straight or convex working edge, used for cutting and splitting operations. Chisels are generally polished". However, from the few chisels described and illustrated[20] by FOOTE, it does not seem that he was not aware of the difference between a pick and a chisel. All those chisels illustrated in Plate 6 of his work are not only partly or fully polished, but all are considerably smaller than a pick. So we should rather distinguish between a straight or convex-edged chisel, and the other types as mentioned by FOOTE. Further a pick would be hafted. SUBBARAO himself illustrates some 4 types of chisels from Sangankallu, none of which seems to have a thick square butt as the one at Nevasa, though it is possible that his Nos. 4 and 5, which are broken, might have had such a butt.

Now, a chisel identical in every respect with the Nevasa Chisel,[21] has been reported from Maski. The latter was hitherto known as a purely Neolithic site, but recent work there indicates that it was also the scene of a Chalcolithic Culture. Though no stratigraphical details of the earlier discovery of the chisel are available, it may well be from the Chalcolithic levels. If so, the parallelism between these chisels might have some significance. Recently some fine chisels and incomplete blocks have been reported from Harichandapur, Sardapur, Kantha and Radiabindha from the districts of Denhkanal and Mayurbhanj in Orissa.[22] But these seem to be primarily Neolithic.

RUBBERS OR MULLERS (Fig. 73, 3)

These have been discussed more fully separately by Dr. BANERJEE.[23] Of those found in the factories, only one is here described.

The muller (No. 6104, NVS, Y.6 'Factory') is 15 cm. × 8.5 cm. × 4 cm. It is flattish on both sides. One side is pecked, whereas the other is comparatively smooth. Shorter sides are roughened by use all round.

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20. FOOTE, *op. cit.* pl. 6.

21. *Annual Report, Arch. Deptt. of His Highness the Nizam's Dominions* for 1936-37, (Calcutta 1939), p. 16 and pl. X(*a*), no. 9457. The plate also illustrated three other chisels, one adze (?) and two pointed butt axes.

22. *I.A.R.*, 1958-59, pp. 36-38, pls. XLIX a—c.

23. Below Section XV.

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HAMMERSTONES (Fig. 73, 4-5, 7)

The hammerstone-like stones associated with factories, may be grouped into three types :

(1) True hammerstones. These have a jagged edge which is formed by the intersection of two sloping surfaces, whereas the other end is broad and flattish to give a good hand-hold. The material is usually dolerite. Of the three, one is described. No. 2279 NVS C(9) is 7.8 cm. × 6 cm. × 4.5 cm. (broadest part).

(*b*) In the sub-type ib, there are three specimens, of blackish dolerite. The one from Factory H, NVS, H(10) is flatish on one side, having a natural flat, smooth cortex, the other has four large flake scars, while all round the broad circumference the surface is roughened by rubbing, (Fig. 73, 5).

(2) Hammer-cum-sling-stones or weights. These are round, made so intentionally by " pecking ", of impure quartz, and have a thick band round the circumference. This seems to be due to bruising when used as a hammer or rubber. Of the 12 specimens, one is described.

Factory H, NVS, H(10). An artificially made round ball about 6 cm. in diameter, slightly flatish on one side, where there are greenish inclusions in the quartz. (Fig. 73, 7).

(3) Sling-stones or weights. These are spherical, with one side slightly flatish, so that the stone can sit. Of the three specimens—all of greyish trap—one from Factory E, (No. 7102, NVS. E.13) is about 6 cm. in diameter. (Fig. 73, 4).

ANVILS (Fig. 73, 1-2)

Out of the four anvils found associated with ' factories ', two are described here. It should be noted that these anvils have to be distinguished from saddle querns and plano-convex rubbers or mullers. The saddle querns are generally bigger and have a sloping surface for crushing or grinding. (This becomes more so by grinding). Rubbers or Mullers on the other hand are smaller and, if plano-convex, have a flat surface on one

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side, and roundish on the other. The flat surface and its sides bear the marks of rubbing and grinding. Anvils, found so far at Nevasa, are not very large. Their one side is flat, but unlike the muller, the other side is very uneven. Somehow it can be fixed in the ground, but quite unsuitable for holding in the hand.

Of the two specimens here described, the first, (No. 2884. NVS. D(7) is small. (17.5 cm, × 11.4 cm. × 3 cm.). It has a flat surface, pecked with holes by usage. Of the rounded one is slightly broken. The underside is very uneven. (Fig. 73, 2).

The second (No. 6153. NVS. Y(6)) is considerably bigger. (19.8 cm. × 12.5 cm. × 4 cm.). The surface is flat, one end slightly pointed, the other oblique. But the other end is rounded in the centre, so that the stone cannot rest on the round, unless the latter is specially prepared for it. (Fig. 73, 1).

VIII

COINS, BULLAE AND SEALS

Two seasons' work at Nevasa yielded 283 coins and terracotta, lead and gold bullae. Their periodwise distribution is as follows

(*a*) Period IV, 89

(*b*) Period V, 185

(*c*) Period VI, 9.

In addition to their stratigraphical value, the coins reveal several new varieties—especially those of the Sātavāhanas or Andhras.

Typologically the coins fall into the following groups.

(*a*) punch-marked coins,

(*b*) uninscribed cast coins,

(*c*) die-struck tribal coins,

(*d*) inscribed coins, and

(*d1*) bullae.

The *punch-marked coins* were two in number. Their distribution shows that one of them comes from the layer 3 of Period IV and the other belongs to layer 4 of Period V.

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The former is silver-coated and resembles coins of the Mauryan period. However, in the Deccan it has to be put to a little later date. Its association with the NBP and the early Sātavāhana coins helps to date the layer to about the 2nd century B.C.

The other is useless for dating on account of its association with antiquities of later date such as the Red Polished ware.

Coins of the second and third varieties show a very indifferent distribution, and hence have no datable value though several of these show similarity with the Tribal coinage from Eran and Ujjain.

Coins bearing legends are restricted mostly to the layers of Period IV and V. Amongst these, those belonging to the Sātavāhana dynasty are the most important. Besides the usual varieties of coins of the kings like Gautamīputra and others which are useful in dating the layers of Period V to which they belong, the set of five coins bearing the legend Siri Sātavāhana and coming from layers earlier than those which give the coins of Gautamīputra, are new and help in assigning the layers of Period IV to about the 2nd century B.C.

These new coins with a variety of symbols on the reverse and either a bull or an elephant on the obverse, point to the inevitable surmise that there might have been several kings bearing this family name. The palaeography of these does not help us much but their association with the antiquities of pre-Red Polished ware horizon supports their dating to about the 2nd century B.C. In view of this new evidence it may not be incorrect to push back the origin of the Sātavāhanas to 3rd-2nd century B.C., rather than to assign them to 1st century B.C. as some scholars try to advocate.

The coins of the later Sātakarṇis, Gautamīputra, Yajña Sātakarṇi and others help to confirm the dating of the layers of Period V which yield Red Polished ware in abundance. The bullae along with the pottery confirm the Roman contact.

The Bahmani, Nizāmshāhi, Qutbshāhi and Chhatrapati coins coming from the topmost two layers are not new but are helpful in assigning these layers of Period VI to about the 14-18th centuries A.D.

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COINS, BULLAE AND SEALS

(*a*) PUNCH-MARKED COINS

Two punch-marked coins were found. Both these are of copper, but one is silver-coated, whereas the other is a small squarish piece of copper.

(i) *Fig. 74, No. 2.*
No. 2849, NVS,Y,3.
Copper, coated with silver on the obverse.
Rectangular with two corners of the longer side cut.
Length 21 mm., breadth 11 mm. and thickness 2 mm. Wt. 19 grains.
Obv. Solid solar symbol, rayed, in left hand lower corner traces of an animal—either bull or elephant—to the right of the symbol, rest effaced.
Rev. Silver-coated, completely effaced.

Square or rectangular punch-marked coins with the corners cut have been reported from a number of sites in India.[1] Whereas, however, most of these show the cutting of the breadth-wise side-corners, the Nevasa coins shows that the corners of the lengthwise side have been chopped off. Similarly silver-plated copper coins have been reported from Taxila. ALLAN and MARSHALL date these on the basis of a coin of Diodotus associated with the hoard and assign them to the latter half of the 3rd century B.C. Though assigned to the Mauryan period by ALLAN,[2] and associated with the NBP at Nevasa, the coin may be put to a little later period, because no such coin has been found so far in the Deccan belonging to the real Mauryan horizon as also due to the fact that the date of the NBP in the peripheral regions should be late. Therefore, it may be assigned to 2nd-1st century B.C.

(ii) *Fig. 74, No. 9.*
No. 4012, NVS, E,4.
Cast copper.
Square, 8 mm., thickness 2 mm. Wt. 10 grains.
Obv. small circle with a pellet, outer circle capped by a group of short lines, traces of similar motif to left; a small solid taurine at left-hand top.
Rev. Effaced.

The taurine and the solar symbol are a persistent feature of both silver and copper punch-marked coins in India.[3] However, the coin under study is distinct from these coins in the sense that in size it is small; it is cast copper; and thirdly the rays do not emanate all along the periphery

1. Durga PRASAD, *JPASB.*, XXX, 1934, Num. Suppl. pl. 19, No. 108, etc.
2. *CIC*, p. xiv.
3. Durga PRASAD, *loc. cit.*

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of the outer circle but are confined to only the topright arc of the circle. Moreover, coins of exactly similar shape and weight with various symbols in relief but bearing no legend occur in large number. It is interesting to note that some of the symbols on these coins are exactly like those found on punch-marked coins.

(*b*) Cast uninscribed coins

The coins of this group were by far the largest in number. These could be grouped into the following varieties.

(*a*) squarish cast copper pieces, with symbols in shallow relief, and

(*b*) tiny circular cast copper pieces with either a hollow circle or a dot in relief.

Variety (*a*)

Twenty pieces represent this group. Of these, three came from the layers of Period IV and the rest from Period V.

The remarkable feature of this group is the uniformity of their shape. The weight ranges between 10.5 to 21.5 grains, and thickness varies between 3 and 2.5 mm. As regards shape, though a few are rectangular, most of the others are squares of 6 to 8 mm. The edges appear bevelled and the reverse appears to be slightly larger than the obverse.

Besides the dimensions, some of the pieces bear tiny symbols in relief. These symbols include the sun, the taurine, a pellet in a circle and possibly caduceus. It is significant that all these symbols occur on punch-marked coins—especially the first two being most common.

Most of these coins show completely effaced surfaces. It is not certain whether all these were used as coins. This might have been the case of those which show no symbols at all. This view is strengthened when a specimen shows the traces of a letter '*go*' as found on the coins of Gautamīputra. Could it be that in such cases it is better to conclude that these pieces were cut from regular coins ?

Apart from this particular case, those bearing symbols having a resemblance to those on the punch-marked coins, might have been specifically cast.

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Fig. 74, No. 10.

No. 2358, NVS, Y,2.

Copper, cast, square 4.5 mm, thickness 2.5 mm.

Wt. 79 grains.

Obv. Dot in a circle with three linear rays in right hand lower corner, to left caduceus.

Rev. Effaced.

Fig. 74, No. 8.

No. 2135, NVS, Y,2.

Copper, cast, square 6 mm., thickness 2 mm.

Wt. 69 grains.

Obv. Similar to No. 2358 above, no caduceus, traces of some other symbols, all these margined by a slanting thin line to right.

Rev. Completely effaced.

Variety (b)

This is represented by three tiny round pieces of cast copper. Of the three, two weigh 5 grains each, and the rusted one weighs 14 grains. All these come from the layers of Period V (Indo-Roman). In diameter all the three are 6 mm., and in thickness 3 mm.

Though it is not possible to assign these coins to any specific date, their resemblance with some of the tiny coins of the Bodhi dynasty[4] may be pointed out. However the latter are of lead and bear a legend.

Fig. 74, No. 7.

No. 1420, NVS, C,3.

Copper, cast, slightly oval in shape, Wt. 5.5 grains.

Obv. Two tiny raised dots.

Rev. Effaced.

No. 1579 (unillustrated) is similar to above, whereas No. 1224 (not illustrated) contains traces of small arc of circle.

(c) Die-struck Tribal Coins

A set of seven coins seems to form a group. These bear no legend, are die-struck and, save one, all are of copper. Lead is represented by a single specimen.

Most of these are fragmentary and a comparison with the known tribal coins of the early centuries prior and after the Christian era is not possible.

4. Rapson, *CIC*, pl. VII.

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Though five of these were found in association with the Red Polished ware, their antiquity need not be doubted. Actually two of the most important varieties were found in Tr. I, layer 3 and Tr. Y, layer 4 and they thus help in confirming the period of this horizon which on the basis of the ceramic evidence also could be assigned prior to the 1st century B.C.

(*a*) *Ujjayini*

(i) *Fig. 74, No. 4.*
No. 4375, NVS, Y,4.
Copper; rectangular (20 mm. × 13 mm); thickness 1.5 mm., Wt. 17 grains.
Obv. Ujjain symbol in the centre, probably a cross capping the right-hand upper orb, faint traces of other symbols.
Rev. Two orbs of Ujjain symbol, rest effaced.

(ii) *Fig. 74, No. 5.*
No. 4363, NVS, H,4.
Lead, fragmentary; thickness 1.5 mm., Wt. 15 grains.
Obv. A hill in three arches arranged in two tiers.
Rev. Ujjain symbols with three orbs extant.
Most of ALLAN's coins (Pls. XI-XII) show similar hills which are however crowned with a crescent.

(*b*) *Eran-like*

Fig. 74, No. 6.
No. 1252, NVS, I,3.
Copper, squarish 13 mm; thickness 2.5 mm., Wt. 43 grains.
Obv. Standing human figure to left; to right traces of a *sadaracakra* in between, a vertical rod with probably a crescent or a taurine symbol.
Rev. Thick-armed *svastika* symbol with triple-pointed ends to each arm, (might be a taurine).

Similar coins of copper are reported first by CUNNINGHAM.[5] They come from Ujjain and Eran. ALLAN[6] also mentions a similar coin. TRIVEDI has published two coins from Saurashtra[7] whereas Karvan in Gujarat also accounts for similar coins.[8]

Thus Nevasa gives, as the evidence stands, the southern-most point for the occurrence of such coins.

5. *CAI*, pl. X, No. 11; pp. 96, 101; pl. XI, No. 20.
6. *BMC, AI*, cl. 3, Var. b-f and h.
7. *JNSI*, (XVII), ii, p. 96, pl. viii, Nos. 8 & 9.
8. Information kindly supplied by DR. R. N. MEHTA.

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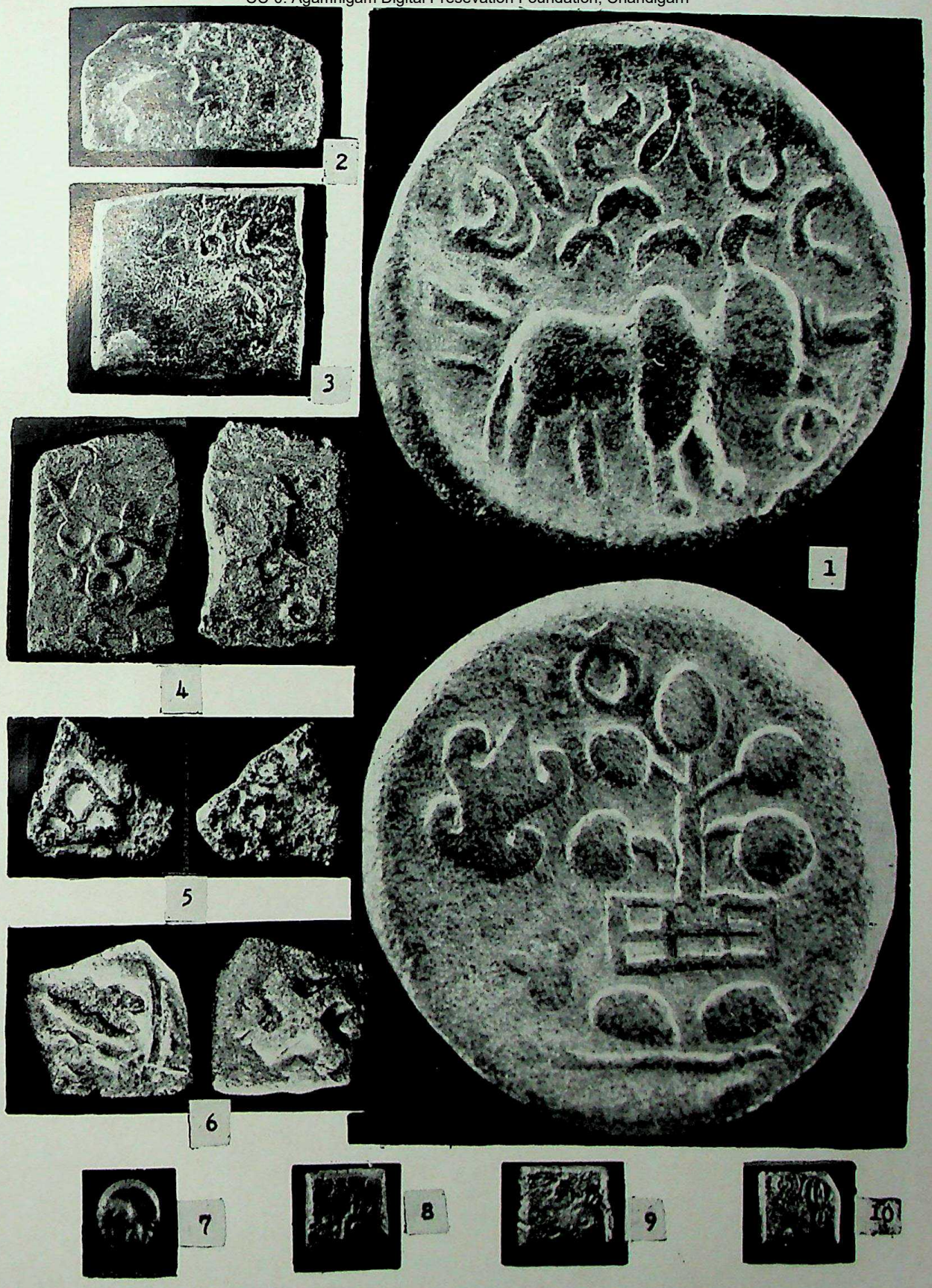

Fig. 71 : Coins of Siri Sātavāhana Nos. 1 [4/1], 3 [2/1]. Punch-marked (Nos. 2, 9) ; Cast uninscribed (Nos. 7, 8, 10); Die Struck (Nos. 4, 5, 6). See pp. 163, 165, 166, 171.

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Fig. 75 : Coins of Siri Sātavāhaṇa, 1 [4/1], 2 [1/2]. See p. 172.

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Fig. 76 : 1. Coin of Siri Sātavāhaṇa. [4/1] ; 2, 3. Coins of Siri Sātakaṇi. [2/1]. See pp. 172, 179

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Fig. 77 : Coins of Siri Sātakaṇi, No. 1, [4/1] ; Nos. 2 and 3 [2/1]. *See p. 179.*

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The Nevasa coin resembles closely the coin published by CUNNINGHAM. TRIVEDI's coins bear a pair of *svastikas*, whereas the Nevasa coin has a single *svastika* on it. Moreover, TRIVEDI's coins are rectangular and more in weight. The Nevasa specimen is squarish and less in weight. Inspite of these deviating features, the Nevasa coin is alike in fabric and motifs with the coins published so far.

The coin is typologically early and when found in association with objects of pre-Red Polished ware horizon, helps in dating the horizon of its occurrence to about 2nd-1st century B.C.

(*d*) COINS WITH LEGENDS

Sātavāhana coins

A number of copper and lead coins of the rulers of the Sātavāhana dynasty were found. These represent several known as well new types. In addition they help along with pottery in dating the various periods at Nevasa.

(*a*) Coins of king Sātavāhana

Five coins bearing the legend ' of king Sātavāhana ' were found. These fall into two categories :

(i) square coin of copper with some animal motif,
(ii*a*) round lead coins with the bull motif, and
(ii*b*) round lead coins with the elephant motif.

Group (i)

Fig. 74, No. 3.

No. 2186, NVS, I,3.

Copper, rectangular: 18 mm. × 16 mm., thickness 1.5 mm., Wt. 61 grains.

Obv. Some animal (might be bull) facing right, over it legend; all in a slanting squarish die.

ta vā ha ṇa sa

Rev. Completely blurred.

Group (ii*a*)

Fig. 74, No. 1.

No. 1175, NVS, X,3.

Lead, circular: diameter 24 mm., thickness 3 mm., Wt. 206 grains.

Obv. Horned and humped bull walking right; over its back three arched hill in two tiers; legend marginally: (all in circular die).

raṃ ño sa ri sa ta vā ha ṇa sa

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Rev. Five solid-branched tree in railing, to right; to left symbol of Brāhmī '*yya*' letter; overhead a taurine; to lower left of railing traces of some other symbol; below railing two fishes going left; river indicated by a thin slightly wavy line below fishes.

Fig. 75, No. 1.

No. 1981, NVS, I,3.

Lead, circular: diameter 24.5 mm., thickness 2.5 mm., Wt. 168 grains.

Obv. As in 1175 above, all in circular die; legend:
ra ña sa ra sa ta vā ha ṇa (sa)

Rev. Five solid-branched tree in railing to left; to its right triangle-headed standard, below it probably *triratna* symbol; over tree, a taurine; below railing fishes and river motif.

Group (ii*b*)

Fig. 75, No. 2.

No. 6490, NVS, E,8.

Lead, round: diameter 24 mm., thickness 3 mm., Wt. 182 grains.

Obv. Elephant with upraised trunk walking right; in its front triangle-headed standard; on its back traces of two empty circles; legend marginally:
(ram) ña sa ra sa ta va ha ṇa sa

Rev. Completely effaced.

Fig. 76, No. 1.

No. 3640, NVS, X,3.

Lead, circular: diameter 22 mm., thickness 3 mm., Wt. 179 grains.

Obv. Elephant with trunk upraised walking right; in its front triangle-headed standard; on its back a group of four empty circles the rightmost having a crescent, legend marginally:
ña sa ra sa ta va ha ṇa sa

Rev. Effaced, but traces of a tree in railing.

Known Coins of King Sātavāhana: Region

So far four coins of this king are known,[9] two of these are published by Prof. MIRASHI and one by Shri S. A. JOGLEKAR and Dr. M. G. DIKSHIT.

All these are reported to have come from region around Hyderabad (Deccan), though the precise findspot of these is not known. The Nevasa coins also coming from the Deccan region acquire some significance when it is seen that no coin bearing the name of Sātavāhana has been reported so far from Berar, Malwa, Gujerat or Andhra-Karnatak. The find of these coins at Nevasa along with those at Hyderabad might indicate that the Sātavāhanas probably originated and ruled in the Deccan in their early career.

9. The reference to the potin coin of this king as given by DR. RAMA RAO in his List (*JNSI* XX) seems to be incorrect.

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Typology

The published coins are of copper, potin and lead. No potin coin of this king has been found at Nevasa.

Prof. MIRASHI'S[10] coin is of copper, square in size and weighs 110 grains. The obverse bears an elephant with trunk upraised walking right. In its front is a "peculiar symbol" of two flattened circles on a vertical line. Above the elephant is a triangle-headed standard with a cross bar laid horizontally. The reverse bears Ujjain symbol with each one of its double orbs containing a pellet. Besides this, there is a *svastika* with its arms in a reverse direction, two representations of the "peculiar symbol", and probably a *nandipada*.

His second coin[11] is leaf-shaped and is of lead, weighing 98.9 grains. It contains on its obverse an elephant facing right with trunk hanging down. The legend is depicted marginally. On its obverse it has a bold Ujjain symbol with pellets between orbs and a crescent capping the rightmost orb.

The third coin[12] reported by JOGLEKAR and DIKSHIT is 5.090 gm. (77 or 78 grains). On the obverse it bears an elephant with trunk upraised and (probably) walking to right. The legend is in the top field and written in a circular fashion. Between the legend and the back of the elephant is the symbol of triangle-headed banner laid horizontally.[13] The reverse bears the Ujjain symbol and the *nandipada* or shield.

The fourth coin[14] coming from the KAUS collection of Hyderabad is reported to be of potin and rectangular in shape. The obverse bears the legend and Ujjain symbol. The reverse has the elephant facing left with a symbol above and *svastika* before. No other details of this coin are known.

These details would at once show that none of these is identical with the Nevasa specimens. None of the Nevasa coins bears an Ujjain symbol, whereas none of the other published coins has a bull motif. The symbol of connected empty circles, hill, tree-in-railing, river and fish, Brāhmī '*yya*'-like symbol, etc. are found for the first time on the coins of

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10. *JNSI.*, VII, pp. 1-4; Dr. RAMA RAO incorrectly describes the elephant as facing left.
11. *JNSI.*, XI(ii), pp. 5 ff., pl. II, No. 11.
12. *BDCRI.*, VI, pp. 5-6.
13. The authors have simply called it a symbol without describing or naming it.
14. As noted previously, the reference to this coin as given by DR. RAO is wrong. It cannot be found in *Proc. Hist. Cong.* 1944, p. 23.

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the Sātavāhana from Nevasa. The only common factors seem to be the triangle-headed standard which occurs on some Nevasa and non-Nevasa coins and the elephant motif. The occurrence of the Ujjain symbol as a favourite motif especially on the coins of the later Sātavāhanas indicates a distinct Central Indian influence which exerted itself when the Sātavāhana empire expanded. The Nevasa coins which are free from this motif are thus decidedly early. Besides this, they have also evidenced the existence of several types of early Sātavāhana coins.

Weights

The weights of the published coins are as follows:

MIRASHI	— 110	grains	— Copper
MIRASHI	— 98.0	,,	— Lead
JOGLEKAR and DIKSHIT	— 5.090	,,	— Copper

As against these, the weights of the Nevasa coins are as follows:

Group (i)	— 61	grains	— Copper
,, (ii*a*)	— 206.168	grains	— Lead
,, (ii*b*)	— 182.179	grains	— Lead

Thus even in weight none of the Nevasa group of Sātavāhana coins is akin to the coins published so far, which thus points to the existence of varied types of early Sātavāhana coins.

The Legend

The most important point worth notice in the Nevasa coins is the legend which is invariably ' Sātavāhaṇa ', whereas all the published coins have ' Sādavāhaṇa '.

It may be noted that the forms ' Sātavāhaṇa ' as also ' Sādavāhaṇa ' occur first at Nanaghat[15] and the latter also in the Nasik record of the family.[16] It appears, therefore, that Sādavāhaṇa and Sātavāhaṇa were contemporary forms as the epigraphical evidence shows. However it is not possible to dogmatise on this philologically.[17]

Regarding the point whether the last syllable is ' ṇa ' or ' ṇa ', it is not possible to argue as in all the published coins the last two letters are cut off from the legend. At Nevasa the form is ' Sātavāhaṇa '.

15. LUDERS' List, *E.I.*, X, Nos. 1113, 1118.
16. *Ibid.*, No. 1144.
17. Linguistically, however, the form with 'ta' should be earlier. But since the word Sātavāhaṇa or Sādavāhaṇa itself is believed to be non-Aryan, it is not possible to be very firm about this. I am indebted to Dr. S. M. KATRE for this information. (See also PRZYLUSKI, *JRAS.*, 1920, p. 273).

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The titles are according to:

MIRASHI	—	raṁño	(*JNSI*,VII).
RAO	—	r a ñ o	(*JNSI*,XX:List).
DIKSHIT	—	cut off	(*BDCRI*, VI)
MIRASHI	—	cut off	(*JNSI*,XI)
Nevasa	—	r a ṁ ñ o	(No. 1175)
		r a ñ a	(No. 1981).

It is pointed out by MIRASHI that the coins having ' raṇa ' or ' raṇṇo ' as the title are earlier and it is found to be changed to ' raña ' or ' rāño ' in later coins.[18] It is significant that none of the Nevasa coins bears the last form.

Palaeography of Nevasa Coins

The accompanying chart (page 176) would show that the coins from Nevasa fall in two distinct groups.

The first is represented by Coin No. 2186, which has—

(1) thin letters,
(2) letters with high verticals,
(3) '*va*' has rounded bottom and thin high vertical. The short horizontal indicating '*a*' kāra is below the top of '*va*'.
(4) '*sa*' has a thin vertical; its loop does not take a curve below the main body.
(5) '*ṇa*' consists of thin horizontal and vertical lines.
(6) '*ta*' has a semi-cricular base and a somewhat thin vertical.
(7) '*ha*' is thin but has a thick base. Its horizontal bar is reasonably long.

As compared to this, the letters on the coins of group (ii*a*) and (ii*b*) i.e., Nos. 1981, 1175 and 6490, 3640 show the following characteristics.

(1) the letters are considerably thick;
(2) the anusvāra on '*ra*' in the case of No. 1175 occurs to the right bottom;
(3) the letters are stumpy and very thick;
(4) the loops of '*sa*' are thick and go down much below the bottom of the main body. In this case, they resemble remarkably the coins of *Siri Sātakaṇi*, described below.
(5) '*ta*' has both the semi-circular as well as inverted v-shaped bottom, and
(6) '*va*' though thick has not as yet developed angular bottom.

With all these details about palaeography, it may be pointed out that a comparison between the legend on coins and that on contemporary records on rock does not help us, as the nature of the material on which the legend is recorded differs. Moreover on the basis of fragmentary legends and letters, it is not possible to decide, especially when we study the palaeography of the post-Mauryan and pre-Christian era period.

However, as the case stands, the Nevasa coins show a later style when compared to that on the coins of king Sātavāhana published so far, and taken to be the founder of the dynasty.

18. *JNSI*, II, 86.

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LETTER	MIRASHI (JNSI VII)	MIRASHI (JNSI XI)	JOGLEKAR & DIKSHIT (BDCRI, Vol. VI)	NEVASA (2986)	NEVASA (1981)	NEVASA (1175)	NEVASA (6490)	NEVASA (3640)
ṁa (ṁ)		–	–	–				Not clear
ña / ño		–	–	–				
sa		Not clear		–			Not clear	
ra / ri				–				
sa				–				
da / ḍa		Not clear						
va / vā								
ha								
na	–	–	–					
sa	–	–	–		–		Not clear	

Who is this Sātavāhana ?

The question, therefore, remains as to who this Sātavāhana was ? The four coins published so far and these five from Nevasa show difference in fabric and palaeography. This indicates that all these cannot be the issues of one and the same king. It seems, therefore, reasonable to conclude that there were a number of Sātavāhanas. Palaeographically and according to the legend, all fall between the 3rd century B.C. and 1st century B.C.

The affinity of some of the Sātavāhana round lead coins from Nevasa with those belonging to Siri Sātakaṇi tends to suggest that this Sātavāhana of Nevasa issues was probably the son of Sātakaṇi I who has been referred to in one of the relievo inscriptions at Nanaghat. This is further supplemented by the find of the coins of Sātakaṇi I in the same levels as will be seen below. It may not be wrong to hold that some of the coins from Nevasa are possibly of Sātavāhana who succeeded his father Sātakaṇi I and who is mentioned in the Nanaghat record. He seems to have come to throne in the Deccan and issued coins similar in fabric and motif to those of his father Sātakaṇi. (c. 194-185 B.C.).

(b) Coins of Siri-Sātakaṇi

Twenty-six lead coins bearing the legend ' siri-sātakaṇi ' were found. Of these, sixteen were associated with the coin of Sātavāhana described above.

The principal types are as follows.

(1) *Coins with the bull motif*

These again show a number of varieties as described below:

(*a*) Bull, triangle-headed standard and tree-in-railing.

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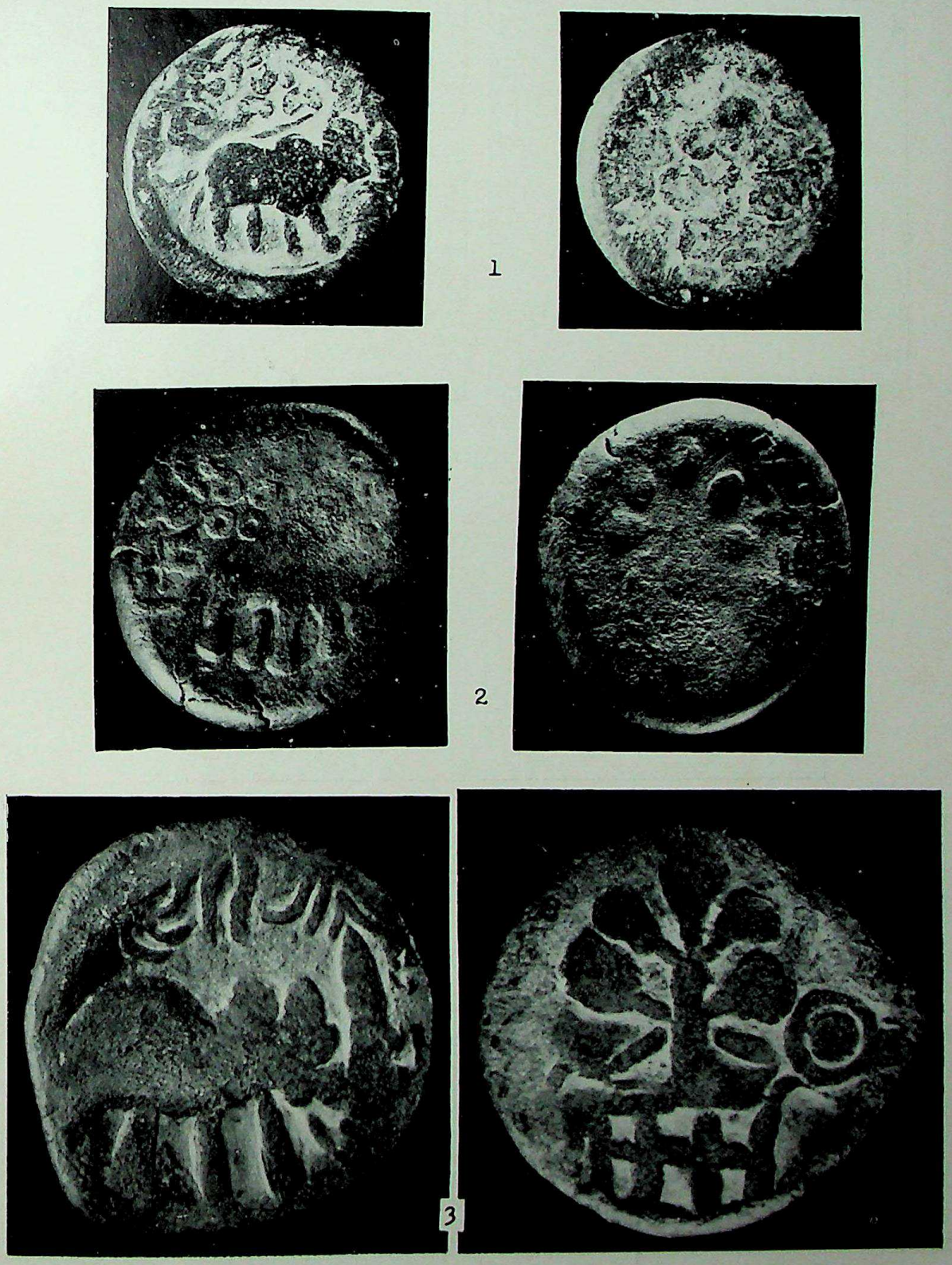

Fig. 78 : Coins of Siri Sātakaṇi, Nos. 1, 2 [2/1] ; No. 3, [4/1]. See pp. 180, 181.

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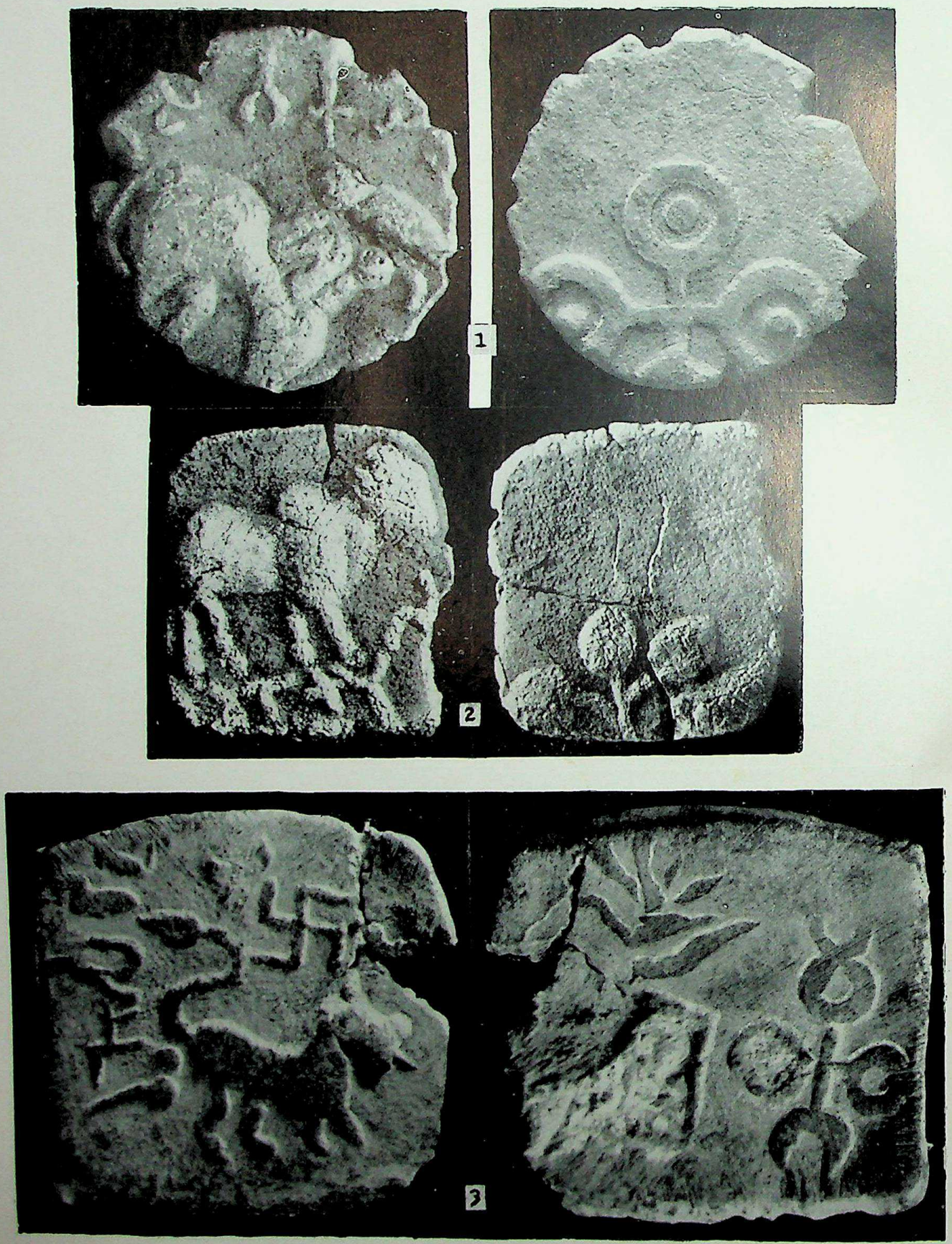

Fig. 79 : Coins of Sātakani. Nos. 1-3. [4/1]. See pp. 181, 182.

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This variety is represented by eight coins, all of lead. They vary in diameter between 22 mm. and 25 mm. and are uniformly 3 mm. thick. Their weight varies between 180 and 252 grains. All these show the legend and the bull motif on the obverse in a circular die.

(i) *Fig. 76, No. 2.*

No. 1810, NVS,X,3.

Lead, circular, diameter 25 mm., thickness 3 mm., Wt. 210 grains.

Obv. Humped bull facing right, in its front a triangle-headed standard, legend marginally in a circular die:

sa ra sa ta ka ṇi sa

Rev. Effaced, but traces of a railing.

(ii) *Fig. 76, No. 3.*

No. 6710, NVS,E,12.

Lead, circular, diameter 24 mm., thickness 3 mm., Wt. 194 grains.

Obv. As on coin No. 1810 above, but without standard.

ña sa ra sa ta

Rev. Traces of a tree.

(*b*) Bull, triangle-headed standard, taurine, river and fish, *svastika* etc.

(iii) *Fig. 77, No. 1.*

No. 6659, NVS,F,7.

Lead, circular: diameter 24 mm., thickness 3 mm., Wt. 239 grains.

Obv. Humped bull facing right, in front triangle-headed standard, legend marginally, all in a circular die.

ña sa ra sa ta ka ṇi sa

Rev. To extreme left a big solid Brāhmi '*yya*'-like symbol, below it *svastika* with angular arms; to right five-branched tree in railing; on either side of top of tree a taurine; to right of tree triangle-headed standard, below it *nandipada*, in lower bottom wavy line, i.e. river, and two fishes.

The other unillustrated specimen comes from X,3 and is exactly like No. 6659, but weighs 195 grains.

(*c*) Bull, triangle-headed standard, tree-in-railing and taurine.

(iv) *Fig. 77, No. 2.*

No. 1369, NVS,X,3.

Lead, circular: diameter 24 mm., thickness 3 mm., Wt. 205 grains.

Obv. Humped bull in high relief facing right; in front triangle-headed standard, traces of legend marginally.

ka ṇi sa

Rev. Five-branched tree-in-railing to left, to right hand top of tree a taurine, rest effaced.

(*d*) Bull, hill, tree-in-railing and triangle-headed standard.

This type is represented by two coins, both of lead.

(v) *Fig. 77, No. 3.*

No. 1712, NVS,X,3.

Lead, round: diameter 25 mm., thickness 3 mm., Wt. 185 grains.

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Obv. Humped bull facing right; over its back a three-arched hill in two tiers on a wavy line, legend marginally—all in a circular die.

.. *ṇi sa*

Ref. traces of a tree-in-railing in centre, to left triangle-headed standard.

(*e*) Bull, hill, tree-in-railing and '*yya*'-like symbol.

(vi) *Fig. 78, No. 1.*

No. 4695, NVS,X,3.

Lead, round: diameter 24 mm., thickness 3.5 mm., Wt. 252 grains.

Obv. Humped bull facing right; over its back a horizontal line having a three-arched hill in two tiers, the arches are thick and unconnected as compared to the coin above; legend marginally, all in a circular die.

ra ña sa ra

Rev. Tree-in-railing in centre, to left thick Brahmi '*yya*'-like symbol like that on coin No. 6659.

The types described above are entirely new. The features of these may be summarised as below.

(1) None of these have the Ujjain symbol,

(2) the chaitya of three arches, the river and the fish and tree-in-railing are found all together on one of the coins of Sātakarṇi I published in *JNSI*, XIII, (i), pl. II, 13.

(3) Our coins weigh between 194 and 252 grains and thus represent a heavy series of coin.

(4) The Nevasa coins show affinity in palaeography and motif and weight to the coins of Sātavāhana. As shown above, the latter might be the son of the former and hence we might assign these coins to Sātakaṇi I, rather than later Sātakaṇis. The affinity between type (*b*) coins of Sātakaṇi and Coin No. 1175 of group (iia) of Sātavāhana also corroborates the above suggestion.

Thus these Sātakaṇi (I) coins with the bull and other motifs represent a variety unknown so far.

(*2*) *Coins with elephant motif*

Two circular copper coins 4.5 mm. thick and weighing 284 and 265 grains have a diameter of 28 mm.

Fig. 78, No. 2.

No. 6863, NVS,H,8.

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Obv. Elephant with upraised trunk walking right, over its back a symbol of four unconnected circles, the rightmost circle capped horizontally by a crescent, legend marginally.

ra ño sa ra sa .. ṇi sa

Rev. Five branched tree (in railing) to left; to right triangle-headed standard, rest effaced.

No. 6544, NVS,F,8. (*Not illustrated*).

It will at once be apparent that there is a remarkable affinity between these coins and the coin Nos. 3640 and 6490, described above and assigned to Sātavāhana. The only difference is that the coins of the latter are of lead, whereas the Nevasa coins under discussion are of copper. Moreover, the latter are greater in weight and size.

Inspite of this, they resemble in shape and motif. It will, therefore, be reasonable to assign them to Sātakaṇi I along with the coins with bull motif.

The contemporaneity of Sātakaṇi I and 'Sātavāhana' coins may be interpreted as follows: Though stratigraphically some coins are from earlier levels and those of the latter belong to upper horizons of the same period (Period IV), the occurrence of the coins of Sātakaṇi I with that of Sātavāhana may mean that the coins of both the son and the father were in circulation contemporaneously for some time.

(c) Coins of later Sātakaṇis

Four coins bearing the legend Sātakaṇi stand apart from those described above. These are different in fabric, symbols and weights and belong to the middle horizon of Period V, i.e. Indo-Roman, and are thus of later levels than those described above. Palaeographically also they are late.

(i) *Fig. 78, No. 3.*

No. 1968, NVS,C,4.

Lead, circular: diameter 17.5 mm., thickness 2 mm., Wt. 80 grains.

Obv. Crude elephant with upraised trunk walking right, (might be bull?); legend marginally

sa ra sa ta

Rev. Seven-branched tree-in-railing, to right a single orb of an Ujjain symbol with a pellet.

(ii) *Fig. 79, No. 1.*

No. 1462, NVS,D,3. Copper, circular: diameter 18 mm., thickness 2 mm., Wt. 40 grains.

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Obv. Elephant with upraised trunk facing right, legend marginally.
ra sa ta ka ṇi
Rev. Ujjain symbol, three orbs extant, each with a pellet in it.

This compares well in weight, depiction of the elephant motif, Ujjain motif and palaeography to the one published by RAPSON[19] and ascribed to Śrī Yajña Sātakarṇi identified with Gautamiputra Yajña Śrī Sātakarṇi whose coins have been found in the Tarhala hoard also.[20]

(iii) *Fig. 79, To. 2.*
No. 1880, NVS,D,5.
Copper, rectangular: 16 × 14 mm., thickness 2 mm., Wt 27 grains.
Obv. Humped bull facing right, below its legs legend.
ta ka ṇi
Rev. Branches of a tree.

A coin with similar motifs and shape has been published.[21] This has been ascribed to Sātakaṇi I. However, our coin has different palaeography, no double line square as also the bull does not face left. This, therefore, may be of some other Sātakaṇi.

(iv) *Fig. 79, No. 3.*
No. 3007, NVS,I,3.
Lead, Square: 21 mm., thickness 2 mm., Wt. 108 grains.
Obv. Lion with tail curled up walking right, above it *svastika* with angular arms, legend at left margin.
raṁ ña sa ri sa
Rev. To right Ujjain symbol with uppermost orb with a crescent; to left tree in railing with leaves long and lean.

An exactly similar coin but with letters reversed has been published by RAPSON.[22] However, the Nevasa coin has no dotted square border. Moreover, it is more in weight than the one illustrated by RAPSON. He ascribes it to Sātakaṇi.

(d) COINS OF GAUTAMIPUTRA

Seven copper coins, all cast, bearing the legend 'Gotamiputasa' or fragment thereof, were found. They are as follows.

19. *CIC*, VII, 166 and 171.
20. *IHQ*, XVI, p. 504.
21. *JNSI.*, XIII (ii), pl. VI, 2.
22. *CIC*, pl. I, No. 9.

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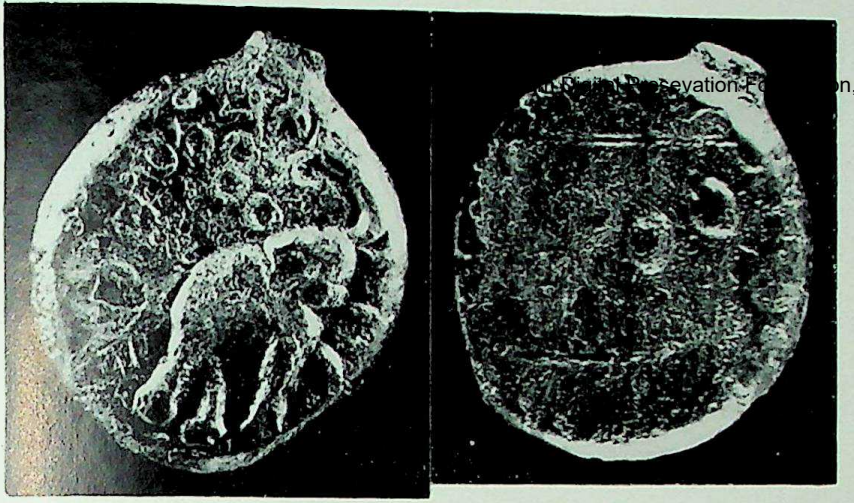

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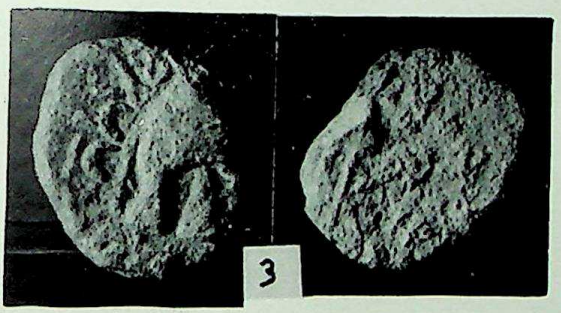

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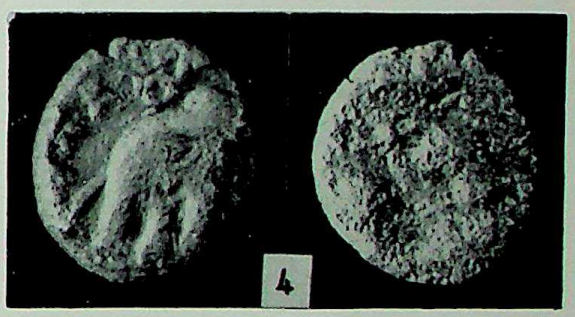

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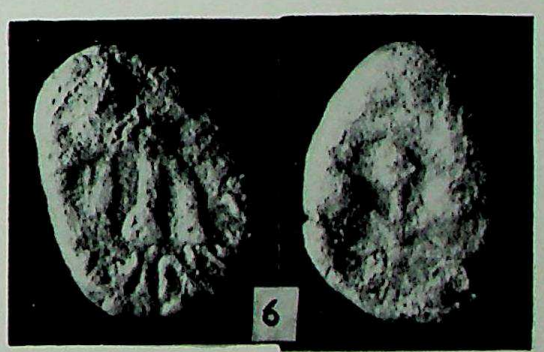

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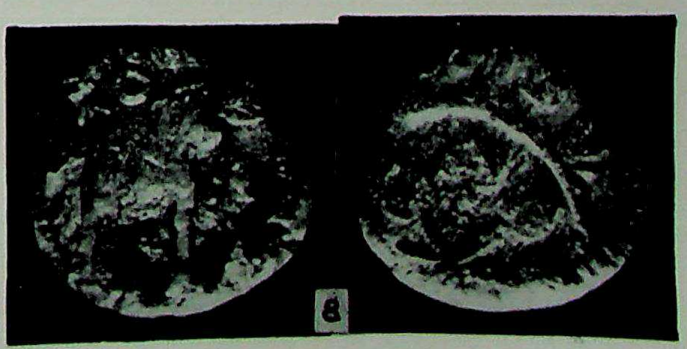

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Fig. 80 : Gautamiputra Coins (Nos. 1-5); Coins of uncertain legend (Nos. 6-8). [2/1]. See pp. 185-187.

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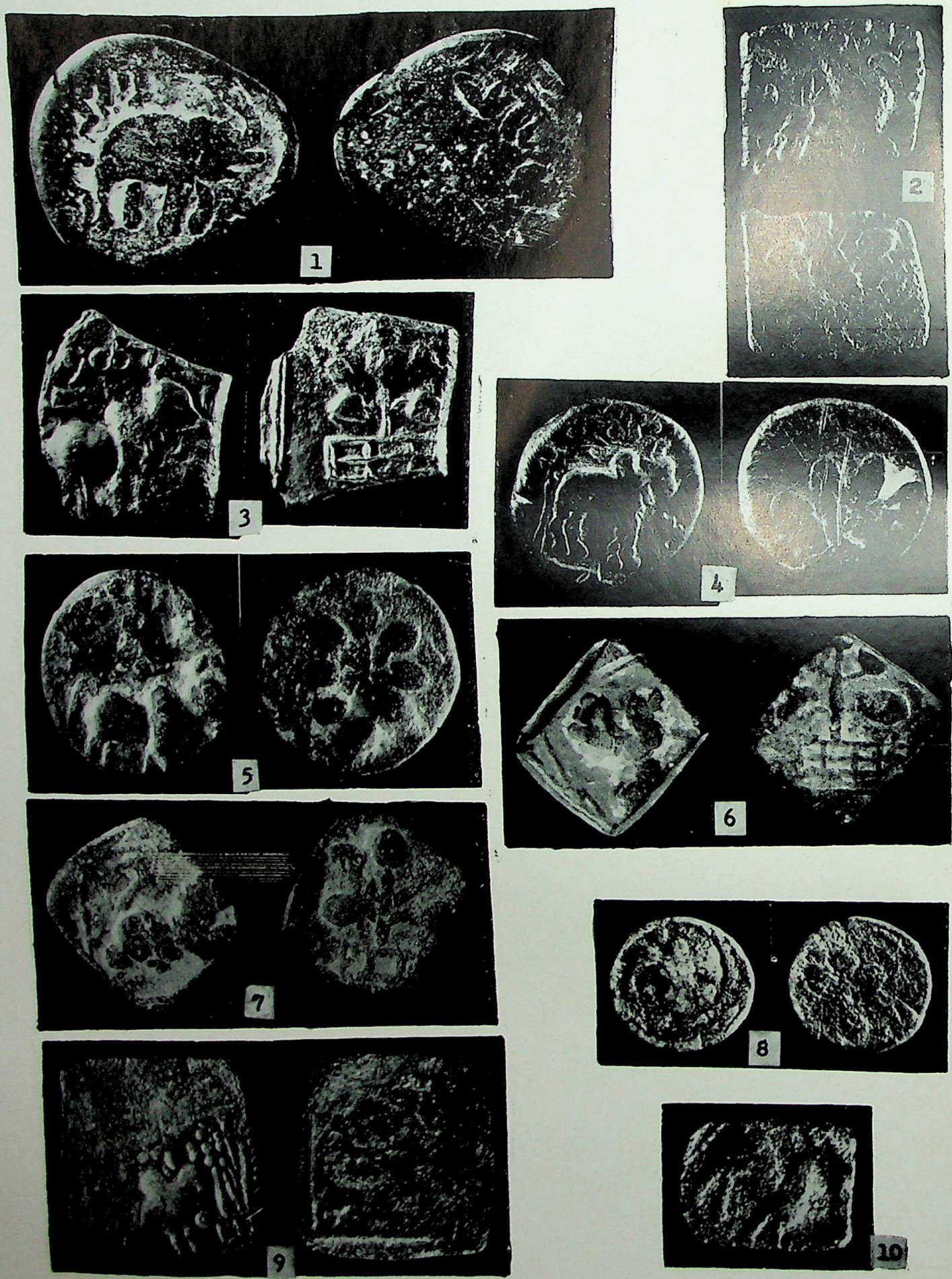

Fig. 81 : Coins of uncertain legend (Nos. 1-5); Uninscribed coins (Nos. 6-10). [2/1]. See pp. 188-192.

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Fig. 80, No. 1.

No. 2287, NVS,B,4.

Cast copper, round: diameters 24 and 22 mm., thickness 4 mm., Wt. 172 grains.

Obv. Elephant with upraised trunk walking right, on its back a group of four empty circles, the rightmost capped by a crescent; traces of legend marginally.

mi pu ta sa

Rev. Tree-in-railing possibly in a circular border.

Fig. 80, No. 2.

No. 3910, NVS,H,4.

Cast copper, oval, diameters 13, 15 mm., thickness 2 mm., Wt. 42 grains.

Obv. Elephant with trunk upraised walking right, on its head a small *svastika* with angular arms, in its front Brāhmi '*yya*'-like symbol, legend marginally.

go ta mi pu ta sa

Rev. Tree-in-railing shown in a circular outline.

Fig. 80, No. 3.

No. 1952, NVS,Y,2.

Copper, oval, diameter 13 and 15 mm., thickness 2 mm., Wt. 339 grains.

Obv. Rear part of elephant facing right, two connected circles on its back, legend marginally.

ño go ta mi

Rev. Effaced.

Fig. 80, No. 4.

No. 1194, NVS,Y,3.

Copper, round: diameter 14 mm., thickness 2 mm., Wt. 29 grains.

Obv. Elephant walking right, trunk cut off, on its back symbol of four circles, legend marginally.

go ta mi

Rev. Tree-in-railing.

Fig. 80, No. 5.

No. 1951, NVS,Y,5.

Copper, round: diameter 15 mm., thickness 2 mm., Wt. 43 grains.

Obv. Elephant with upraised trunk walking right, in front traces of some symbol, overhead legend.

ta mi

Rev. Six close and radiating branches of a tree in a circle with thick dots at intervals.

These coins, though varying in size and weight, seem to represent one group as the elephant and the tree-in-railing motif is common to all. Though on the basis of the legend they can be ascribed to Gautamiputra, none of the coins of this king so far published bears this combination of the obverse and the reverse.[23] Most of the coins known hitherto have the Ujjain symbol as the principal motif on the reverse.

23. The only exception seems to be that in *JNSI*, XII(1), pl. II, No. 1.

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Coins with Incomplete Legend

On thirty-three coins the legend is very partially preserved. These are described below, and wherever possible assigned to various rulers of the Sātavāhana dynasty.

No. 1189, NVS,D,3.
Copper, round: diameter 15 mm., thickness 2 mm., Wt. 33 grains.
Obv. Elephant with upraised trunk walking right, marginally traces of '*ra*' and '*ya*'.
Rev. Effaced, traces of a tree.
(*Not illustrated*).
No. 3416, NVS, E, 4, is exactly similar in motif and weighs 37 grains.

In none of the coins assigned to Śrī Yajña Sātakarṇi, the reverse has a tree-in-railing, though the elephant occurs on the obverse. If our coins belong to Yajña, then these might be taken to be a new variety.

Coins with Uncertain Legend

(*i*) *Coins with elephant and tree-in-railing motif.*

Fig. 80, No. 6.
No. 825, NVS,A,2.
Cast copper, oval 16 mm. × 14 mm., thickness 2 mm., Wt. 32 grains.
Obv. Elephant walking right with trunk upraised, below legs legend marginally.
ño sa ri (*go*?)

(ii) No. 133, NVS,Y,2.
Cast copper, round: diameter 14 mm., thickness 1.5 mm., Wt. 44 grains.
Obv. Elephant with upraised trunk walking right, on its back *svastika* and symbol of two empty circles, in its front some blurred symbol, legend marginally possibly.
ta ni
Rev. Seven-branched tree-in-railing encircled by a circle with dot decoration inwards.
(*Not illustrated*).

Both these coins on the basis of their similarity to coin Nos. 3910 and 1952 described above, may be ascribed to Gotamiputa Sātakaṇi.

(iii) No. 1754, NVS,H,2.
Copper, round: diameter 17 mm., thickness 5 mm., Wt. 80 grains.
Obv. Elephant with upraised trunk walking right, in its front Brahmi '*yya*-like' symbol, on its back two empty circles, traces of legend marginally.
Rev. Seven-branched tree in a railing, all in a circle.
(*Not illustrated*).

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(iv) No. 4305, NVS, G,4.

Cast copper, round: diameter 13 mm., thickness 3 mm., Wt. 40 grains.

Obv. Elephant facing right, only legs and body appear, traces of legend marginally.

..... *sa* ..... *sa*

Rev. Tree-in-railing.

(*Not illustrated*).

(v) No. 2691, NVS, E,3.

Copper, round: diameter 11 mm., thickness 2.5 mm., Wt. 32 grains.

Obv. Elephant walking right, traces of legend overhead—

(might be) *go* (?)

Rev. (Partial) tree-in-railing.

This is the smallest coin in size with legend.

(*Not illustrated.*)

(vi) No. 3199, NVS, E,4.

Cast copper, oval: diameter 14-15 mm., thickness 1.5 mm., Wt. 31 grains.

Obv. Rear part of an elephant walking right, on its back symbol of two empty circles, legend marginally.

ra ña

Rev. Tree-in-railing.

(*Not illustrated.*)

This coin seems to go well in weight, fabric and palaeography with the coins of Gautamīputra.

(vii) *Fig. 80, No. 7.*

No. 4977, NVS, Y,1.

Copper, oval: 13 mm., and 17 mm., thickness 2 mm., Wt. 41 grains.

Obv. Elephant with trunk upraised walking right, in its front Brāhmī '*yya*'-like symbol, legend marginally[24]

ra go sa

Rev. Tree-in-railing

(viii) *Fig. 80, No. 8.*

No. 1448, NVS, C,3.

Copper, round: diameter 17.5 mm., thickness 2.5 mm., Wt. 60 grains.

Obv. Elephant with upraised trunk walking right, in its front Brāhmī '*yya*' like symbol, on its back one empty circle, legend marginally.

go ..... ta sa

Rev. Tree-in-railing in a circle with thick dot decoration on the outer margin of the periphery of the circle.

This might be of Gautamīputra. The dot decoration on the circle in this case is on the outer edge and not inside the circle.

24. The legend is not clear.

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(*ii*) *Coin with elephant and svastika motif*

(i) *Fig. 81, No. 1.*
No. 730, NVS,X,1.
Lead, irregularly oval: 20 mm. × 23 mm., thickness 2.5 mm., Wt. 145 grains.
Obv. Elephant with trunk upraised walking right, traces of blurred legend marginally.
Rev. *Svastika* with angular arms and a thick crescent (?) to its right, rest effaced.

This seems to be a new type. The posture of the elephant is entirely crude and unmajestic and differs from that on the Sātavāhana coins described so far. The *svastika* on the reverse is big and perfectly angular. Incidentally it may be noted that large *svastika* occurs as a motif on the obverse of a lead coin of Kauśikīputra Sātakarṇi, though the reverse consists of Ujjain symbol.[25]

(*iii*) *Coins with bull and tree-in-railing motif*

(i) *Fig. 81, No. 2.*
No. 1799, NVS,I,3.
Copper, rectangular: 15 mm. × 12 mm., thickness 2 mm., Wt. 35 grains.
Obv. Humped and horned bull facing right, traces of blurred legend marginally.
Rev. Tree-in-railing.

(ii) *Fig. 81, Na. 3.*
No. 6657, NVS,F,6.
Copper, square, fragmentary, thickness 2.5 mm., Wt. 53 grains.
Obv. Humped bull facing right, legend not clear.
ño chchha (?)
Rev. Tree-in-railing in a (square) border.

This coin is very interesting but unfortunately fragmentary. The form of '*chchha*' is similar to that which occurs in Hathigumpha and Pabhosa records.

An identical coin occurs in layer 9 of Sq. E. Thus it seems to be fairly early type, though its identification remains a problem. It may also be added that an elephant is a very common motif on Sātavāhana coins though the bull does not occur on the coins of any of the later Sātavāhana kings.

(iii) *Fig. 81, No. 4.*
No. 1195, NVS,Y,3.
Lead, circular: diameter 16 mm., thickness 2 mm., Wt. 72 grains.

25. *JNSI*, XIII, pl. VI, No. 8.

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Obv. Humped bull facing right, in its front *nandipada* over its back empty circle motif, traces of legend marginally.

Rev. Tree (in railing) in a circle.

(iv) *Fig. 81, No. 5.*

No. 942, NVS,X,3.

Lead, circular: diameter 17 mm., thickness 1.5 mm., Wt. 42 grains.

Obv. Humped bull facing right, marginally blurred legend.

Rev. Eight branches of (a tree?) or *aṣṭacakra*?
The tree shows very close branches. No stem of the tree is visible, nor the railing. It is likely that it is a new device.

UNINSCRIBED COINS OF UNCERTAIN ATTRIBUTION

(*a*) *Coins with lion motif*

A group of thirteen coins, 12 of lead and one of copper, is very interesting.

All are rectangular in shape, the largest measuring 15 mm. × 19 mm., and the smallest 12 mm. × 11 mm. Their thickness shows little variation as it ranges between 2 mm. and 3.5 mm. The thinnest weighs 13 grains, the thickest 80 grains.

Eleven belong to Period IV and two to Period V. Irrespective of the levels, their execution is uniform. For example, the puissant lion is shown facing the right in all the specimens, whereas the reverse has a solid five-branched tree in a plain railing whose vertical pillars are not close to one another. In some cases, the lion is shown in incuse. The majestic ease of the puissant lion with its tail held aloft as if in wagging is remarkable.

Except when we come to the Sātavāhanas and their feudatories, the lion does not occur so frequently as the bull and the elephant. Even on the punch-marked coins, the bull and the elephant are frequently depicted. In the tribal coinage, we have a few coins on which the lion is shown standing facing mostly left, though in some cases, it does face right.[26] Here the reverse has the tree in railing. But the lion shown is in standing posture and the tree is quite unlike that on the Nevasa coins. The coinage of the Sātavāhanas has the lion motif, as for instance, the coins[27] of Sātakarni I,

26. ALLAN, *CIC*, Pl. XXXII, 17, 21, 22; also Pl. XLVI, 4.
27. *JNSI.*, IV (1), pl. II, 8; *JDHC*, II(2), p. 85, No. 39.

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Sātakarṇi II,[28] Gautamiputra,[29] Vāśishṭhīputra Pulumāvi,[30] Sātakarṇi IV,[31] Saka Sātakaṇi[32] and Yajña Sātakarṇi.[33] However, in none of these, the pose of the lion comes closer to that on the Nevasa coins. The reverse symbol of tree-in-railing is not associated with the lion only.

The coins cannot be precisely dated. Since, however, a large number comes from Period IV, and is associated with the NBP, they may be placed in the 2nd-1st century B.C.

(i) *Fig. 81, No. 6.*
No. 1447, NVS, X,3.
Lead, Rectangular: 14 mm. × 12 mm., thickness 1.5 mm., Wt. 54 grains.
Obv. Pussiant lion facing right, tail curled up, linear border.
Rev. Five-branched tree in railing.

(ii) *Fig. 81, No. 7.*
No. 1580, NVS, X,3.
Lead, rectangular, 14 mm. × 13 mm., thickness 1.5 mm., Wt. 45 grains.
Obv. As of No. 1447 above, but figure depicted complete.
Rev. Five-branched tree in railing.

(*b*) *Coins with the bull motif*

Five coins, on the basis of their fabric, fall into four sub-groups :

(i) circular lead coins of a thin fabric,

(ii) cast, copper, thick,

(iii) rectangular, copper, medium thick, and

(iv) square, copper, thin fabric.

(i) Circular lead coins:

(i) *Fig. 81, No. 1.*
No. 1114, NVS, D,2.
Lead, circular: diameter 13 mm., thickness 2 mm., Wt. 24 grains.
Obv. Humped bull standing facing right, below its mouth and in front of legs as also on its back traces of a blurred taurine symbol; entire motif in a dotted circle; stamped with a circular die.
Rev. Traces of a five-branched tree probably in railing.

28. Rapson, *CIC*, Pl. I, Nos. 8, 9.
29. *JDHC.*, p. 84, No. 35.
30. *JDHC.*, II(2), p. 84, No. 36.
31. *Ibid.*, No. 37, *JNSI*, XV(1), pl. 1, 19.
32. Rapson, *op. cit.*, pl. III, 33; G.P. 2., *I. A.* XX, p. 61-65.
33. *JDHC.*, II(2), p. 85, No. 40.

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(ii) No. 3223, NVS, G,3.
Lead, circular, diameter 9 mm; thickness 1.5 mm., Wt. 4 grains.
Obv. Traces of a humped bull, standing facing right, rest effaced.
Rev. Faint remains of three solid branches of a tree.
(*Not illustrated*).

These coins are remarkable for the excellent depiction of the bull. Though this animal occurs even on some of the Kshatrapa and Nāga coins in a dotted circle,[34] the Nevasa specimens have in addition the taurine-like symbol associated with it, as also the tree on the reverse. In none of the coins published so far such a combination has been noticed. That way, these are entirely new.

It is not possible to assign any exact date to these coins for want of legend and parallel. On stratigraphic position, they can be put to the early centuries of the Christian era.

(ii) Thick, cast copper coin.
No. 1800, NVS, C,4.
Copper, circular, diameter 9 mm., thickness 3.5 mm., Wt. 18 grains.
Obv. Humped bull standing facing right.
Rev. Effaced.
(*Not illustrated*).

The depiction of the bull is exactly similar to the coin No. 1114 above. However, there are no other extant symbols, nor is there any evidence of a dotted circle. The coin might be contemporary with it because of similarity of the bull motif.

(iii) Rectangular, copper, medium thick fabric.
Fig. 81, No. 10.
No. 2888, NVS, Y,3.
Copper, rectangular 16 mm. × 11 mm., thickness 2 mm., Wt. 25 grains.
Obv. Humped bull walking right; traces of an empty circle over its hump.
Rev. Completely effaced.

As in the case of the bulls on the coins of this group, the bull depicted on this coin is also well drawn. The hump, the belly and the chest are plump. A portion of the mouth has been cut off. The tail which is a little

34. *JNSI.*, XVII (II)Pl. VII, No. 4 and 5; RAPSON, *CIC*, Pl. XI, No. 294; X, 266; Feudatories of Andhras: *Ibid.*, Pl. VIII, No. 221.

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raised up, hangs down loose and straight. The only parallel for such depiction is the square coin of lead assigned by RAPSON[35] to Svāmi Rudrasena III. It may, however, be pointed out that the similarity is only superficial for the material, the shape and the symbols are totally different. The bull as found on several of the Sātavahana coins is also different in form from that on this coin. The dating, therefore, of this coin cannot be certain, though stratigraphically it comes from pre-1st century A.D. levels.

(iv) Square, copper, thin fabric.

Fig. 81, No. 9.

No. 6564, NVS, F,8.

Copper, square: 19 mm., thickness 1 mm., Wt. 21 grains.

Obv. Humped bull standing facing right, dewlap not prominent but shown in a schematic fashion; below dewlap a small circle with a pellet; at right a railing enclosing probably four stalks of trees, at left two stalks having small solid fruits (?); over hump, traces of a blurred symbol.

Rev. Hill of three arches in two tiers, to left hand top corner a taurin, whole enclosed in a square border.

This is probably a unique coin. Unfortunately most of the portion of the field is effaced and hence it presents difficulties in assigning it to a certain category. Similar massive bulls with exuberant dewlap occur on certain Audumbara coins illustrated by ALLAN.[36] Tree-stalks in a railing occur on some of the Taxila coins as well.[37] However, in none of these the bull, the tree, the hill and the taurine are found on one and the same coin. Humped bulls also occur on the late Kshatrapa coins but devoid of its association with the tree. Though some of these show a hill on the reverse[38] in none of the coins published so far such a combination occurs.

Stratigraphically, the coin can be ascribed to Period IV.

(*c*) *Coins with elephant and tree motif*

A group of twelve copper coins consisted of the obverse bearing an elephant walking right with the trunk raised and with the reverse depicting a tree (with solid branches) in a railing.

35. *CIC*, pl. XVII, No. 890.
36. *CIC, AI*, pl. XIV, Nos. 13, 16, 17.
37. *Ibid.*, pl. XXXIII, Nos. 10, 11, 12.
38. RAPSON, *op. cit.*, pl. XVII, No. 890; pl. VIII, No. 221.

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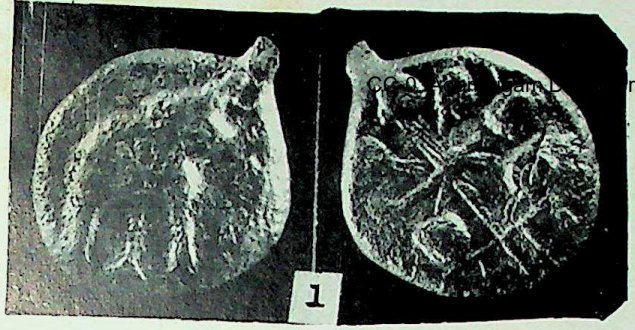

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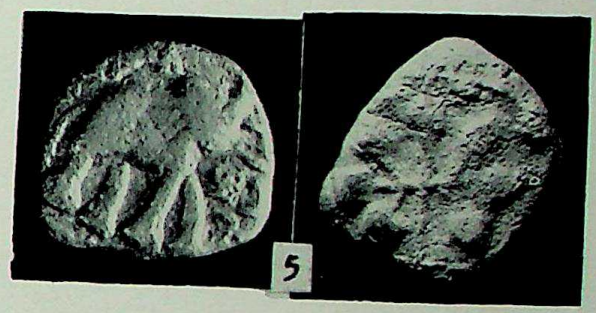


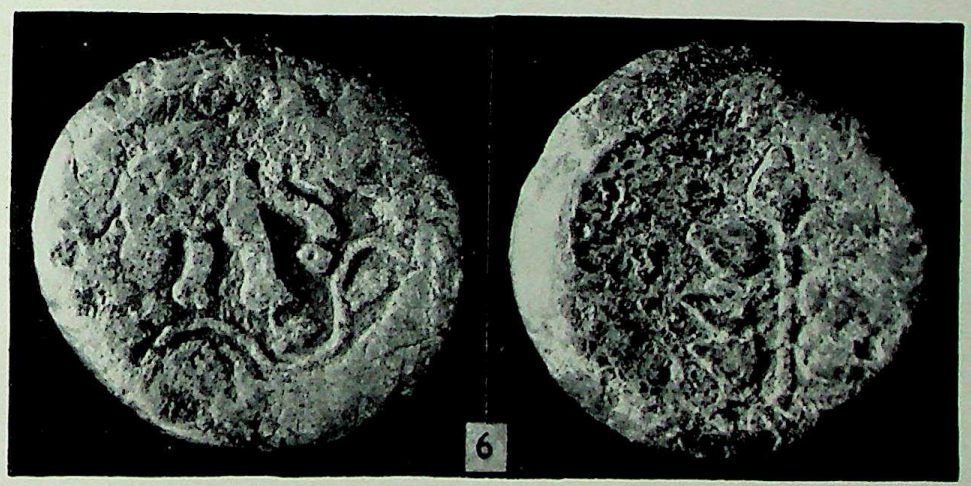
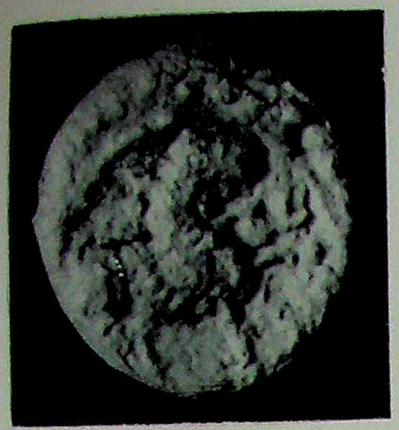


Fig. 82 : Uninscribed Coins. [2/1]. See pp. 195-199.



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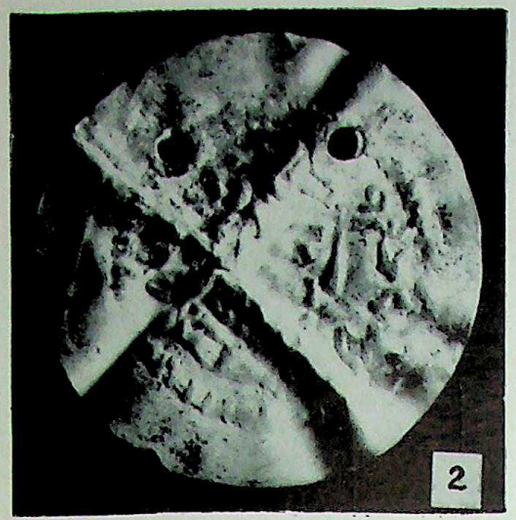

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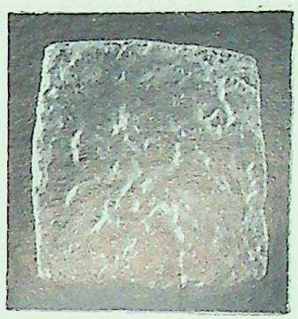

Fig. 83 : Coins with Pallava motif, Nos. 1, 3 ; Bullae : Nos. 2, 4, 5; Miscellaneous coins : Nos. 6, 7. [2/1]. See pp. 199, 201.

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Save three, all these have their diameter between 12 mm. and 14 mm., and thickness measuring 2 mm. and 3 mm. Their weight also ranges between 41.5 and 45 grains.

None of these have any legend. However they occur with the Red Polished pottery and thus may be assigned to 1st-3rd century A.D. In the whole range of proper Sātavāhana coinage, coins with elephant on the obverse and a tree in a railing on the reverse, are scarce.[39] The Ujjain symbol is the most patent motif associated with the elephant device on the Sātavāhana coins.

RAPSON[40] illustrates two coins similar in device to the Nevasa specimens. These, however, are of potin and differ considerably in weight. These are conjecturally attributed by him to Gautamīputra. It is not possible to attribute the Nevasa coins to any ruler precisely. Tentatively, they may be assigned to the late Sātavāhanas since they come from the region of their rule, and seem to have some superficial similarity with the coins of Kṛṣṇa Sātakarni published by RAPSON.[41]

Fig. 82, No. 1.
No. 3597, NVS, H,2.
Copper, cast, round: diameter 14 mm., thickness 2 mm., Wt. 44 grains.
Obv. Elephant with trunk upraised walking right.
Rev. Seven solid-branches of a tree in railing.

(ii) Coins with elephant, tree and Brāhmī '*yya*'-like motif.

Four coins, all coming from the levels of Period V (layers 2, 3 and 4) and bearing the elephant on the obverse and the tree-in-railing on the reverse, form a class by themselves. In addition to the symbols of the preceding group, these coins bear a small Brāhmī '*yya*' like symbol in front of the elephant.

These are cast copper coins varying in diameter between 15 mm. and 20 mm. Thickness, however, shows a variation between 1.5 mm. and 3.5 mm. The weight measures 34.5 and 45 grains.

Fig. 82, No. 3.
No. 2593, NVS, E,3.
Copper, round: Diameter 15 mm., thickness 3.5 mm., Wt. 45 grains.
Obv. Elephant with trunk raised walking right, trunk and rear legs fall outside the coin, in front a symbol resembling the Brāhmī letter '*yya*'.
Rev. Traces of a railing, solid branch of a tree, to left Brāhmī '*yya*'-like symbol.

39. RAPSON, *CAI*, pl. IV, Nos. 74, 75.
40. *JNSI.*, XX(I), List of Published Satavahana Coins.
41. *op. cit.*, pl. VII, Nos. 182, 188, 197.

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For want of any legend or parallel, these coins will have to be grouped with those of category (i) above. So far the '*yya*'-like symbol has been associated only with a single coin[42] belonging to king Sātakaṇi I and another of Vasiṭṭhiputa Pulumāvī. Another closer analogy can be drawn to the coin[43] of king Sātavāhana published by Prof. MIRASHI. However, our coins are entirely different in fabric, shape and other symbols.

Stratigraphically they are assigned to the early centuries of the Christian era.

(iii) Coins with elephant, tree and a group of empty circles

Three coins, all cast, represent this variety. These have an elephant walking right with trunk upraised on the obverse and a tree-in-railing devise on the reverse. Besides the elephant, there are traces of two, three or four empty circles touching one another and forming a motif. It is usually on the back of the elephant.[44]

These are oval coins with diameters ranging between 13 mm. and 17 mm., thickness 2.5 mm. and 1.5 mm., and weight varying between 37 and 32 grains.

Fig. 82, No. 2.

No. 1398, NVS, D,3.

Cast copper, oval: diameter 13 mm. and 15 mm., thickness 2.5 mm., Wt. 35 grains.

Obv. Elephant walking right with trunk upraised, on its back a group of two empty circles, much effaced.

Rev. Seven-branched tree in railing.

The symbol of circles might have been akin to the Ujjain symbol so frequently met with on Sātavāhana coins. However, the Nevasa coins have no legend nor is the symbol completely visible on any of the three coins. RAPSON[45] has illustrated a similar symbol on one of the Andhra coins. Circle symbol also occurs on the coin of Kauśikīputra Sātakarṇi.[46]

(iv) Elephant, tree and triangle-headed banner motif

No. 1708A, NVS, B,4.

Cast copper. Oval, diameter 15 mm. and 17 mm., Wt. 42 grains.

Obv. Elephant walking right with upraised trunk, traces of probably a triangle-headed banner in front, marginally very faint traces of possibly a legend.

Rev. Six-branched tree (in railing).

(*Not illustrated*).

42. *JNSI.*, IV(I), No. 6; *JDHC* II(2), p. 88, No. 76.
43. *JNSI.*, VII, (1945), pp. 1-4.
44. A coin with similar motifs but of lead also occurs at Nevasa (No. 3486, NVS,Y,3).
45. *Op. cit.*, IV, No. 59; also pl. VIII, No. 232, of uncertain assignment.
46. *JNSI.*, XIII(2), pl. VI, 5.

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(v) Elephant, *svastika*, taurine, tree.

Fig. 82, No. 4.

No. 1941, NVS,Y,2.

Cast copper, oval, diameter 14mm. and 12 mm., thickness 2.5 mm., Wt. 38 grains.

Obv. Elephant walking right trunk upraised, over its back *svastika* with angular arms, above it a taurine.

Rev. Blurred traces of a tree in railing.

The elephant and the *svastika* motif occur on several tribal and Sātavāhana coins. However the angular form of the *svastika* and the depiction of the style of the elephant is more akin to the late Sātavāhana coins, though no exact parallel is known.

(vi) Combination of (ii) and (v).

Fig. 82, No. 5.

No. 669, NVS,F,2.

Copper, irregularly circular, diameter 14 mm., thickness 2 mm., Wt. 41 grains.

Obv. Elephant with upraised trunk walking right, in its front Brāhmi '*yya*'-like symbol, over back *svastika* with rounded arms, traces of loops of letters marginally.

Rev. Seven-branched tree in railing, all in a circular border.

Except the form of the *svastika* which is akin to earlier forms of the symbol, the rest of the features of the coin go well with categories (ii) and (v).

(vii) Coins of thick fabric with elephant and tree motif

This group is represented by eight coins. Their thickness varies between 3 mm. and 5 mm., and diameter between 22 mm. and 27 mm. Their weight also shows variation between 106 and 249 grains. Though they bear the same symbols as on class (i) above, their fabric is entirely different. It is likely that these coins though now with blurred surfaces, contained legends originally.

No. 3277, NVS,Y,3.

Copper, round. diameter 22 mm., thickness 3 mm., Wt. 133 grains.

Obv. Elephant with upraised trunk walking right, over its back empty circles and taurine (?).

Rev. Long, three-compartmental railing, with tree.

(*Not illustrated*).

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The reverse compares favourably with those published by RAPSON.[47] The pose of the elephant is also akin to that on the Nevasa coin. RAPSON'S coins do not tally in weight with the Nevasa coin and are made of potin. However, its similarity with No. 60 is remarkable. In that case, it might be of Siri Sātakaṇi. Stratigraphically also it belong to Period IV.

Fig. 82, No. 6.
No. 1573, NVS,X,3.
Copper, round: diameter 25 mm., thickness 4 mm., Wt. 240 grains.
Obv. Elephant with upraised trunk walking right, over its back a circle (taurine ?), traces of '*sa*' marginally, below wavy line with curves alternated by fishes (?).
Rev. Tree in railing, seven branches arranged schematically three on each side, one at top, thick, solid, pointed branches, blurred traces of some other symbols to left.

In many ways the coin appears to be new. However, if the wavy line is interpreted as the river and the other symbol as fishes, then, it is possible to compare it with some of the Sātavāhana coins. For instance, river with fish forms one of the motifs on the coins[48] of Sātakaṇi I and Satakaṇi II.[49] Though the depiction of the river is more markedly forceful and dynamically wavy on the Nevasa coin, in weight and size it is akin to the coin of Satakaṇi I. However, the latter is of potin and bears a number of symbols, which might have been effaced on the Nevasa coin.

Even in absence of a legend, the Nevasa coin may well belong to Sātakaṇi I or some other early Sātavāhana ruler, as it occurs in pre-Megarian levels.

(B) COPPER COINS WITHOUT LEGEND: RECTANGULAR

This category is represented by a single coin.
No. 2026, NVS,C,5.
Copper, rectangular: 14.5 mm. × 13 mm., thickness 1.5 mm., Wt. 33 grains.
Obv. Elephant with upraised trunk walking right, traces of some symbol on its back.
Rev. Effaced and peeled off.
(*Not illustrated*).

The condition of the coin is extremely unsatisfactory and hence it cannot be assigned to any king with certainty. It, however, shows some similarity in motif to the coins of Sātavāhana dynasty published by RAPSON.[50]

47. *Op. cit.*, pl. N, Nos. 60, 61.
48. *JNSI.*, XIII(1), pl. II, 13; SVI(1), pl. II, 22; RAPSON, *CIC*, pl. I, Nos. 1 and 2.
49. RAPSON, *op. cit.*, pl. I, No. 5.
50. *Op. cit.*, pl. IV, No. 87.

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(C) Lead coins with Elephant Motif: Round

No. 3126, NVS,F,3.
Lead, circular: diameter 12 mm., thickness 1 mm., Wt. 12 grains.
Obv. Faint traces of an elephant facing right.
Ref. Effaced.
(*Not illustrated*).

For want of clarity, nothing definite can be said about this coin. However, it resembles in size and weight to a potin coin of uncertain assignment published by Rapson[51] and belonging to *c.* 3rd century A.D. The Nevasa coin belongs to the same period.

Fig. 82, No. 7.
No. 3486, NVS,Y,3.
Lead, circular, diameter 22 mm., thickness 3 mm., Wt. 156 grains.
Obv. Elephant with upraised trunk walking right, on its back a symbol of four connected circles.
Rev. Traces of a tree in railing, in right hand field a vertical and wavy line, rest effaced.

A coin with similar motif and ascribed to Kauśikīputra Sātakarṇi is published.[52] However, our coin stratigraphically belongs to an earlier date.

Pallava Coins (?)

Two coins with motifs exactly similar to those found on some Pallava coins were found at Nevasa.

(i) *Fig. 83, No. 1.*
No. 855, NVS,C,2.
Copper, round: diameter 20 mm., thickness 5 mm., Wt. 117 grains.
Obv. A lion standing facing right, in its front a vertical linear staff with thick dot capping it—human figure?—all in a circle.
Rev. Probably vase on a stand between two posts on each side, the entire motif in a circle with radiating lines.

(ii) *Fig. 83, No. 3.*
No. 1545, NVS,G,3.
Copper, round: diameter 20 mm., thickness 5 mm., Wt. 130 grains.
Obv. Lion, with tail upraised standing facing right, rest blurred, all in a circle.
Rev. As in No. 855 above.

51. Rapson, *Ibid.*, XIII, No. 463.
52. *JNSI.*, Vol. XIII, pl. VI, 5.

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The coins are similar to those published by ELLIOT.[53] His coins are of alloy of probably coarse silver and he assigns them to the Pallavas. M. S. KRISHNA reports similar coins[54] which have the lion and the sun motifs. P. L. GUPTA[55] says, "The coins bear no inscriptions and their attribution to the Pallavas is conjectural. Some specimens of this type.....bear the inscription '*Sataka*' and '*Vishamasimha*', showing that the type was probably started by the Sātavāhanas and continued by the Chālukyas."

Stratigraphically, these coins were associated with the Red Polished pottery levels and since they come from the topmost layers of that period (V), may be assigned to the 2-3rd century A.D. or later.

BULLAE

Three specimens of bullae, one each in terracotta, lead and gold were found. Respectively they are as follows.

(i) *Fig. 83, No. 4.*
No. 902, NVS,D,2.
Lead; round, fragmentary: diameter 22 mm., thickness 1 mm., Wt. 40 grains.
Obv. Bust of a king facing right, straight sharp nose, head wearing a string, all in a dotted circle, traces of date.
Rev. Seated figure holding a staff in right hand, dotted border.

(ii) *Fig. 83, No. 5.*
No. 902A, NVS, Surface.
Terracotta, round: diameter 22 mm., thickness 2 mm., Wt. 29 grains. Cast in a single mould; reverse flat.
Obv. Bust of a king facing right, sharp nose, head covered by a wig, all in a dotted outline; two holes for suspension.
Rev. Flat, blank.

(iii) *Fig. 83, No. 2.*
No. 1890, NVS,B,4.
Gold, circular: diameter 27 mm., thickness 1.0 mm. Wt. 16 grains.
Obv. Bust of a king facing right, bust shown in repousse manner and in a circle the outline of which is made of short lines, traces of date in front of face, two holes for suspension.

Clay bullae have been reported so far from a number of sites in India;[56] Sisupalgarh in Orissa, Rajghat and Kosam in U.P., and

53. *Coins of South India*, Pl. II, Nos. 49 and 50.
54. *Ann. Rep. Mysore Arch. Deptt.*, 1940, p. 75.
55. *Bibliography of Indian Coins*, pt. I, (1950), p. 121.
56. *AI.*, No. 5, p. 102.

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Ujjain in Madhya Pradesh, Karad and Brahmapuri (Kolhapur) in Maharashtra, Kondapur in Andhra and Chandravalli in Mysore. Besides this, gold bullae have been found at Nagarjunikonda, and Chakerbedha in Central Provinces.[57] To this list we may now add Nevasa.

Nevasa bullae are made of terracotta, lead as well as gold. The lead specimen is similar to those found at Kondapur[58] after the coins of Tiberius (A.D. 37). The only difference is that the material differs and the Nevasa specimen being fragmentary, it cannot be said whether it had holes for suspension. The bullie thus becomes an important piece of evidence in dating the associated horizon.

The terracotta specimen shows a fine portrait after the manner of the Romans. That it was produced in a mould is evident from the projecting outline all along the periphery.

The gold specimen is remarkable for the repousse method of depicting the figure. Though the piece is distorted, its figure is in good relief. It may be noted that the repousse technique is characteristic of Taxila figures.

MISCELLANEOUS

This group consists of four coins each making a class by itself.

(i) *Fig. 83, No. 6.*
No. 4106, NVS,E,4.
Lead, round: diameter 16 mm., thickness 1.5 mm., Wt. 42 grains.
Obv. Three-arched hill on a linear base, traces of some letters like '*sa*'.
Rev. Ujjain symbol with a pellet in each orb.

This is the only coin in the entire collection from Nevasa which has the hill motif combined with the Ujjain symbol.

(ii) *Fig. 83, No. 7*
No. 5287, NVS,F,6.
Copper, rectangular 12 mm. × 14 mm., thickness 1 mm., Wt. 21 grains.
Obv. *Svastika* with the tip of the arms bevelled and made pointed.
Rev. Blurred and effaced.

This might be allied to one of the tribal coins from Eran described above. The only difference is that this coin does not show arms with triple-

57. WHEELER, R.E.M., *Rome Beyond the Imperial Frontiers*, (Penguin, 1955) pp. 181-182.
58. *ABORI.*, XXII (1941) pp. 19-80, also WHEELER, *op. cit.*, pls. 22-23.

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pointed ends. Otherwise in size and fabric it is identical with No. 1252 described before.

(iii) No. 2389, NVS,I,3.
Lead, square, 2 mm., thickness 1 mm., Wt. 17 grains.
Obv. Probably humped bull.
Rev. Traces of a tree.
The obverse and the reverse of this coin are extremely effaced. Hence it cannot be identified with certainty.
(*Not illustrated.*)

(iv) No. 804, NVS,X,2.
Lead, circular; diameter 21 mm., thickness 3 mm., Wt. 172 grains.
Obv. Effaced, traces of '*ka*' and '*sa*'.
Rev. Badly effaced but traces of probably a three-arched *caitya* and some other motif, all in a circle with radiating short lines outside the periphery.
(*Not illustrated.*)

This coin seems to be unique but unfortunately effaced. The motif on the reverse is not to be met with on any Sātavāhana coin published so far, but partially occurs on some Pallava coins.

Seal (*Fig. 171, Nos. 1 and 4*)

A unique seal of ivory was found in layer 9 of Tr. E. and could be assigned to Period IV.

The seal has a circular flat base and a flat and round hold. The diameter of the base on which the letters and the various symbols are carved in the negative is nearly 15 mm.

The whole base area is divided into four compartments. The latter are bounded by margins with a rope-like pattern. Short lines decorate the periphery.

The four compartments bear four symbols, some associated with Buddhism and some found on coins. The left hand top compartment has a *svastika* with angular arms. The right hand top compartment has the *triratna*; the left hand bottom has probably a pair of hooded serpants or might be '*Śrīvatsa*' and the right hand bottom compartment has a symbol resembling the triangle-headed banner laid horizontally.

It may be noted that whereas these symbols are laid horizontally, the space in between these two rows of compartmental symbols bears three letters written horizontally from left to right in Brāhmī alphabet.

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The legend is as follows :

Ka nha sa

The Sanskrit rendering will be '*kṛṣṇasya*' meaning 'of krishna'.

The following points may be noted in dating the seal :

(*a*) The form of *svastika* is fully developed and perfectly angular. Early *svastika* forms as found on coins and caves are with rounded arms.

(*b*) The rest of the symbols occur on several Sātavāhana coins.

(*c*) The palaeography shows that the letters are thick and stumpy ; the loop of '*sa*' is straight ; the vertical rod of '*ka*' is short and '*ṇa*' is also short.

(*d*) It is significant that all the coins bearing the legend 'siri sātavāhana' have been found in the same horizon as that of this seal. Most of the coins can be ascribed to about the 2nd-1st century B.C. The seal, therefore, may be assigned to the same period on the stratigraphic as well as palaeographic evidence.

It would be tempting to suggest something more than this. The Nevasa coins indicate that coins bearing the legend Sātavāhana cannot be placed earlier to 2nd-1st century B.C. Though Prof. MIRASHI assigns his coins with similar legend to the founder of the Sātavāhana dynasty on palaeographic grounds, our coins with the same legend show that they are definitely later. It is likely, therefore, that the name Sātavāhana was borne by more than one king of the dynasty. Though no coins bearing the name '*kaṇha*' and belonging to the Sātavāhanas have been found so far, could it be that the seal found in association with such coins, belongs to Kaṇha Sātavāhana (?)

MUSLIM-MARATHA COINS

Nine coins belonging to the Muslim-Maratha period were given to Prof. G. H. KHARE of the Bhārata Itihāsa Samshodhaka Mandala of Poona for study.

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According to his report none of these is a new variety. His findings are summarised below.

Tughluq coins

Nos. 1450 and 1450a (surface) represent the coins of Muhammad Tughluq. The former is identical with No. 538 of *CMSD*, the latter with No. 587 published in the same catalogue.

Bahmanī coins

Coin Nos. 852 (C,1) and 2577 (I,1) are too much defaced but one of them might be of Ahmad bin Ahmad Bahmanī.

Coin of Akbar

A single coin No. 781 (H, 1a) belongs to Akbar. One of its face is effaced. (*CCLM*, 1170, 793).

Nizāmshāhī coins

Two coins, one of Murtazā and the other of Burhan (surface) represent Nizāmshāhi coins. These go well with *NS*. VII, p. 52 and *NS*. VII, p. 53.

Qutbshahī

No. 3283, (I,2) belongs to Abd-ul-lāh Qutb Shāh. (cf. *NS*. XI, p. 317).

Shivarāi of Peshvā Period

A thick copper coin bearing on the obverse the legend ' Shrī Rājā Śiva ' and on the obverse ' chhatrapati ' is a shivarai coin of Peshva Period. (No. 1057 G, 1a).

All these coins date the uppermost two layers between 14th and 18th centuries A.D.

None is of these is illustrated.

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IX

POTTERY OF PERIOD III

The ceramic industry of the Chalcolithic period at Nevasa consisted mainly of four wares of which the painted black-on-red or the Jorwe fabric was the most abundant. The others were the grey ware, the coarse red and the orange ware.

The Painted black-on-red ware

This ware was a little over 65% of the pottery of this period, and embodied all the features of the Jorwe ware.[1] Actually it is so identical with the Jorwe ware that it need not be named otherwise. The dull matt surface, the paintings in black, metallic ring, identity of shapes and designs and the fashioning on a wheel—all these are common to the Jorwe and Nevasa pottery.

This does not mean, however, that Nevasa has failed to yield new elements in this type of ware. Besides the real Jorwe ware, the Nevasa black-on-red exhibited quite a range in the treatment of the outer surface. Whereas the Jorwe ware has a matt surface, the Nevasa ware shows the application of various slips, though principally red. Thus in addition to the unslipped surfaces, we have sherds with a scarlet red slip (Nos. 5603, 7091, 906 etc.), those with a bright red slip (Nos. 494, 5504 etc.), and dull brownish-red slip and those with an orange-red wash.

Another distinguishing feature of the Nevasa pottery is the variety of shapes, so far unknown at Jorwe. The latter site yielded principally carinated bowls, spouted vessels and pots with high necks. All these were in use at Nevasa; but in addition to this, we have also spouted bowls, spouted vessels with high neck and squat body, a number of very small bowls, basins, and ringed and stemmed stands.

All these varied shapes were mostly fashioned on the wheel though cases are not wanting where it can be noticed that some parts of a vessel were made by hand in a concave mould-like contrivance. This is evident especially in some small globular pots where there are traces of finger

1. SANKALIA and DEO, *A Report on the Excavations at Nasik and Jorwe*, pp. 160 ff.

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impressions showing pressing. In other cases, as in spouted vessels, the spouts were affixed later as evidenced by the mixing up of the surfaces and in some cases by the protruding spout in the interior of the pot. It is interesting to find that spouts were separately made and fired and then affixed to a pot. This is easily noticed when the spout-portion is broken horizontally which shows the tough portion of the spout and the coating of clay given over it so that it could become a part of the spouted vessel. Besides the spout, the breaks at the carination and the neck where the flared mouth is fixed, show that these pots were made in different parts.

It is likely that bamboo baskets also were used for making clay vessels as is evidenced by a few thick sherds with perfect bamboo-matting impressions on them. Though the tradition of using basket-mould for pottery goes back to Neolithic times, the evidence at hand at Nevasa is too meagre for any generalisation.

As at Jorwe, Nevasa painted pottery also shows an abundance of bowls and spouted pots. The bowls were of various sizes and it is possible that they were in a series fitting into one another. Some are so small that they might have been used as toy pots by children or might have been utilised for keeping precious articles. The spouted pots were either with constricted or high neck, the level of the tip of the spout being more than that of the mouth of the pot. Moreover, the spouts were not necessarily cylindrical and slanting. In several pots, the spouts were affixed upright. It is not possible to say to what purpose all these spouted pots were put to. But some of these pots were definitely used as funerary pots as they were found inside a burial urn.

A very surprising aspect of this pottery is that it shows no trace of being used for cooking. Almost all the vessels of this group, though worn out in some cases, appear unsoiled. To say that these painted vessels were used only on certain occasions and the unpainted and coarser fabrics were used in every day life and cooking, also remains uncorroborated as the latter also do not show any traces of soot on the underside.[2]

The monotony of stereotyped geometric designs so characteristic at Jorwe is relieved by a few masterly depictions of animals on Nevasa

2. This feature is identical with the Navdatodi (Madhya Pradesh) Chalcolithic pottery as well. See for further details, SANKALIA, SUBBA RAO and DEO, *The Excavations at Maheshwar and Navdatodi* (Poona 1958).

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pottery. The dog and the running wavy-horned antelopes[3] are drawn dynamic and realistic. The geometric designs, on the other hand, are either neatly drawn or drawn at random. Some of the former are so neatly drawn that they appear to have been painted with the help of very thin and fine brushes and with control over the line.

Many of these pots have a number of symbols which were termed in the case of Jorwe pottery as " Potter's marks ". It is to be noted that such marks—and Nevasa painted pottery exhibits quite a variety of these—are restricted only to this ware of the Chalcolithic period. They are drawn mostly on the outer surface of carinated bowls and spouted pots. Had these been Potter's marks, we should expect them on some of the other associated wares as well. These, therefore, may not be " Potter's marks ".

Grey Ware

The number of grey ware sherds was much less than that of the ware described above. Yet it consists of three main varieties :

(*a*) *burnished grey*,

(*b*) *coarse grey*,

(*c*) *red-painted grey*.

All the three varieties are characterised by a black core, clay mixed with dry grass and fine sand as degraissant and a limited range of shapes. The firing is not perfect and as a result we have several specimens with grey-brown blotchy surface.

The *burnished grey ware* of Nevasa is remarkable in the sense that it has for the first time brought to light spouted vessels which were totally absent in the fabric at Jorwe. Spouted vessels in coarse grey and polished black ware are reported from Brahmagiri[4] in the layers of Period I B.[5] These pots are reported to have " funnel spouts ". They are also reported from Nagarjunikonda.[6] The Nevasa grey ware spouts, however, are tubular and resemble closely those in the Jorwe fabric described above. The find of polished stone tools and burials in the layers associated with this ware

3. See ANSARI, Z.D., 'Spiral-horned Antelope Motif.." *BDCRI*, Vol. XVIII, pp. 110-116.
4. *A.I.*, No. 4, T. 46, 76, pp. 229, 231.
5. *Ibid.*
6. *I.A., A Review*, 1958-59. p. 6.

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as at Brahmagiri may indicate that the shape of the grey spouted vessels at Nevasa might have been the same, as at Brahmagiri (T.46). Though it is as yet premature to be dogmatic on the relation between Brahmagiri and Nevasa cultures, such comparisons help adding new clues for a possible link up.

None of the spouts are illustrated as they are mostly like those of the Jorwe ware. It is interesting, however, to note here that the shapes of this ware, viz. knobbed convex lids and urns, are totally absent in the painted ware.

The *red-painted grey ware* is more or less allied to the coarse grey ware with unburnished surfaces with the difference that it is painted and it is restricted only to the flat based deep *kuṇḍā*. The painting occurs mostly at the clubbed rim. That it was done after firing is clear from the fact that the paint easily goes off, if rubbed. Only a few pieces show traces of burnishing. The core is invariably gritty and black-brown.

The *coarse grey ware* presents a soiled or dull surface and is represented by three principal shapes, viz. spouted vessels, burial urns and knobbed lids. The shape of the first could not be ascertained as only fragmentary spouts were found. However, the spouts in the burnished grey ware are found to be short and tubular, (and may be compared with those from Nagarjunikonda), while those belonging to the coarse variety are long and tubular but slightly tapering towards the pouring end. The knobbed lids have a convex base. The knobs are short stumpy columns with either flat or a slightly convex head. The latter bears small, decorative, circular depressions which range in number between one and eight. Since there is absolutely no deviation from the standardised shape of those bearing one or more depressions, it is reasonable to say that these were mere ornamental in nature. Lids of similar shape and fabric have been reported from Bahal[7], and Prakashe[8] in Khandesh, and Navdatodi in Madhya Pradesh in the Chalcolithic horizon.

The burial urns are characterised by constricted neck, flared mouth and globular body and seem to be handmade. Similar urns are reported

7. Information kindly supplied by Shri M. N. DESHPANDE of the Deptt. of Archaeology.
8. Thanks are due to Shri B. K. THAPAR of the Deptt. of Archaeology, for this information.

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from Jorwe[9] and Brahmagiri.[10] The former site did yield fragments of urns but no complete burial. The latter gave urns which go well with some of the types at Nevasa.

It is fairly certain now that the urns of this shape and fabric were used only for funerary purposes. It is reasonable to note that in no other fabric of the Chalcolithic levels this shape occurs. The associated shapes were the spouted pot and the carinated bowl—both of which were found inside an urn containing skeletal remains of a child. It is, therefore, safe to assume that the latter two shapes served as grave goods and were not meant to contain the skeletal remains.

Normally two such urns were kept face to face, for burial. But cases are on record where three smaller urns were kept in a line with the base of the middle urn broken. It may also be noted (as described elsewhere), that in very rare cases ordinary pots painted black-on-red and belonging to the Jorwe fabric were also used for burial purposes. This, however, was an exception rather than a rule.

The grey burial urns could be grouped into five categories as follows:

(*a*) with flaring mouth, globular body and with or without fingertip decoration at the constricted neck,

(*b*) as above but with a slight carination near the base,

(*c*) as (*a*) but with a short flared mouth,

(*d*) as (*c*) but with bulging body,

(*e*) as (*a*) but with the rim out-turned and rounded edge.

It was found that category (*a*) was more abundant than the rest.

These urns have decorations at two places—either at the neck or at the edge of the rounded rim. These consist of finger-tip design (No. 7222, A10a); slant, short and vertical incisions (No. 6971, C10); rounded chain incisions (No. 6581, A9);[11] incisions forming a diamond design at the neck (No. 6000, C9); and short incisions at the top of the edge of the rim (No. 4698,

9. Sankalia and Deo, *loc. cit.*
10. *A.I.*, No. 4, *op. cit.*
11. Cf. Sankalia and Deo, *op. cit.* Fig. 85, Nos. 6-8.

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B,9). In a few cases incised linear decorations are found both at the neck as well as at the rim (No. 6031, D,9). Plain urns were also found.

Practically all the urns are burnished and present either a full ashy or blackish grey or blotchy surface. The core is either brownish or jet black and shows sometimes a mixture of fine sand. It is quite likely that the flaring mouth was attached to the globular body as a separate piece as most of the urns show a break at the constricted neck.

As noted above, grey ware burial urns have been reported from Bahal, Jorwe, Nasik and Nevasa in Maharashtra, and Bijapur District and Brahmagiri in Mysore State. It is to be noted that Navdatoli on the Narmada has not yielded as yet either a burial or a burial urn. In this connection, it is interesting to note that Chandoli in Poona District has given, on surface exploration, urn of Malva fabric as well as Jorwe fabric in addition to the cream ware and the black-and-red painted in ashy white of the earlier phases of the Navdatoli Chalcolithic horizon. It would be interesting and worth while to dig at Chandoli which may open up evidence of contacts between the Deccan and the Malva Chalcolithic culture.

Coarse Red Ware

Unlike Jorwe, Nevasa Chalcolithic pottery was characterised by the use of coarse red ware side by side with the real metallic Jorwe ware. The use of this ware was found to have been current in all the layers of the period showing that it was neither a later nor an earlier innovation.

This coarse ware stands out distinctly both in make and shapes as compared with the Jorwe ware. It is inferior in firing, in the purity of clay, in the treatment of the surfaces. The shapes are strictly utilitarian with the predominance of the storage jars and dough plates. The former, besides being used for storage purposes, were also used as burial covers for adults. The decorations consist chiefly of fingertip designs, though other designs viz. punctured dots and incisions so characteristic at Jorwe, also persist.

The latter, i.e. dough plates have been found in fairly reasonable amount. It may be noted that these have so far not been found either at Jorwe or Nasik.[12] These, however, show a remarkable affinity to similar doughs found in the later phases of the Chalcolithic at Navdatoli. These

12. Probably because of the limited extent of the dig.

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seem to have been made by hand by pressing the clay over leaves or dry sand, as the under surfaces show impressions of leaves and intrusion of gravel. It may be noted here that similar doughs are even now in use in the rural Deccan and Madhya Pradesh where they are termed '*pāḷās*' or '*katharoṭs*'.

Besides these two principal shapes, others such as the vessels with elongated body, carinated high-sided cups (with stands ?) and vessels with straight sides also were in use.

Most of these pots were possibly in everyday use; whether for storage purposes or otherwise, it is not possible to say. It is surprising that none of these show any signs of contact with fire in cooking. It needs to be emphasised here that the earthern vessels found in excavations of early layers should be studied from this point of view to ascertain the use of these in every day life.

Orange Ware

This ware is characterised by bright orange coloured surfaces. It was first noticed in the lowermost Chalcolithic layers at Nasik. It has a metallic ring like the real Jorwe ware, but differs from the latter inasmuch as the surfaces easily give out ochre powder if rubbed by fingers. In quantity, it is almost negligible.

The Nasik-Nevasa sherds are mostly small fragments showing a uniformly baked red-brown core with the clay containing quartz specks. It is likely that the matt orange surface of this ware is due to water-logging.

This ware was restricted to the upper layers of the Chalcolithic at Nevasa.

Black-and-red ware

The black-and-red ware is represented by a single sherd (No. 364, NVS, I, 6) and hence it is not possible to draw any conclusion regarding the large scale association of this ware with other wares of the Chalcolithic period at Nevasa.

It may, however, be pointed out that the shape of the pot indicated by the sherd is not so far found in the black-and-red of the historic layers. As the position stands, the relation of the black-and-red with the painted wares at Nevasa will be clear only when further evidence comes to light.

* * * *

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Having mentioned the characteristics of the main fabrics of the Chalcolithic period the representative types are described below.

PAINTED BLACK-ON-RED WARE

(Figs. 85-93)

Type 1: Spouted pots (Fig. 85)

General characteristics:

Fabrics: Two: (1) red wash, matt surfaces, core red, uniformly baked, clay ferruginous and sometimes mixed with fine sand and mica, metallic ring; (2) overbaked and hence surfaces tough, black and sometimes devitrified. Also found in grey burnished ware.

Thickness: Maximum 8 mm. and minimum 4 mm.

Painting: Either at the carination or at the edge of the spout or at the constricted neck or along the longitudinal section of the spout, or at the joint of the spout with the pot—mostly bands. Other designs: I*a*2, III*e*, IV*d*, IX*a*, XIII, XIV, and XX.

Spouts: Invariably handmade; affixed later on to the pot; thinner at the edge and thicker at the joint. Spouts either concave-sided, or short, or tapering towards the pouring end, or tubular. Rising higher up or equal to the level of the flared mouth. Length between 126 mm. and 39 mm., diameters between 40 mm. and 18 mm.

Mouth: diameter of the flared mouth varies between 182 mm. and 108 mm.

Shoulders: either straight sloping or concave sloping or convex sloping. The following are the illustrated types.

T.1 Almost a complete spouted pot with saggering base, short tubular spout, flared mouth with rounded edge, red wash, design XI above the carination, No. 7771, NVS, E, 14.

1*a* A complete pot with a long tubular spout rising higher than the level of the rim, saggering base, beaded out edge. No. 2285, NVS, C, 10.

Spouts (Fig. 85)

T.A Fragmentary tubular spout broken in the middle, surfaces having a red wash. No. 8081, NVS, H, 12.

B Fragment, as above, but slightly concave-sided, a broad band on the under-surface. No. 8795, NVS, H, 13.

C Fragment, both the ends broken but tapering in outline, decoration as above. No. 8492, NVS, F, 12.

D Fragment of a tubular spout with some coating peeled off showing how the original spout was coated over and merged with the body of the pot, red wash all over, black band at the base. No. 4585, NVS, X, 4.

E Fragment, tubular spout, red wash all over. No. 7603, NVS, C, 11.

Rims (Fig. 85)

F Fragment of a straight flaring out rim with rounded edge, a black band over the edge and the neck, red wash. No. 7763, NVS, D, 11.

G Fragment, as above, but with the edge slightly beaded out. No. 7659, NVS, C, 11.

H Fragment, as above, but with the edge beaked out, rest as above. No. 7414, NVS, C, 11.

T.1*b* *Spouted pots with flared mouth, tubular spout and no carination.* (Fig. 86)

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(*a*) *Type 1*

(*b*) *Type 1C2*

Fig. 85A : Spouted Pots of Jorwe Fabric (*See pp. 212-213*).

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(*a*) *Spouted Pot : Type 1C1*

(*b*) *Carinated Bowl*

Fig. 85B : Pottery of Jorwe Fabric. *(See p. 217).*

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Fig. 85 : Types 1, 1a ; A-H [1/2]. Spouted pots, T. 1, 1a ; Spouts A-E ; Mouths, F-H. Period III. (See p. 212.)

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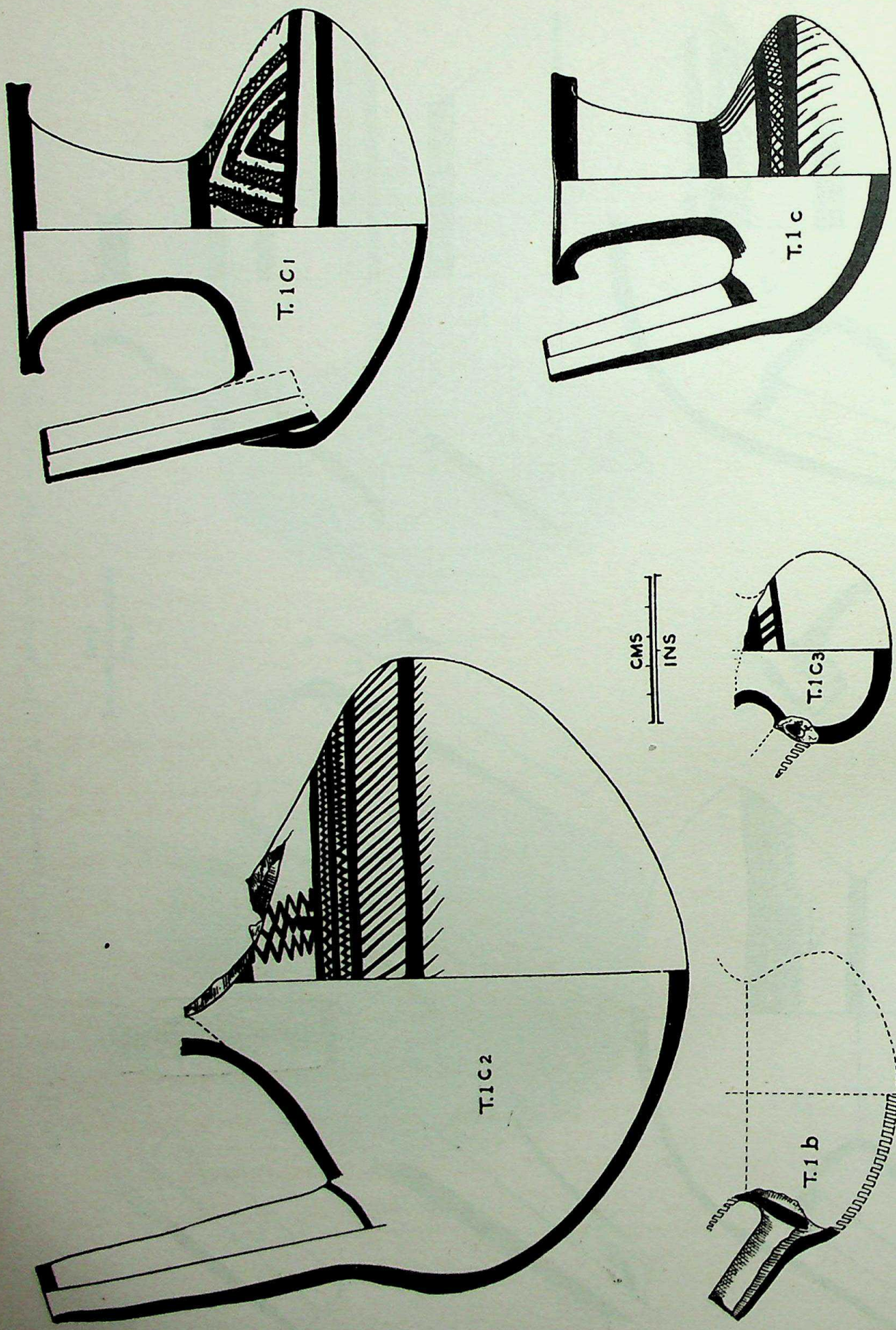

Fig. 86 : Types. 1b, 1c- $1c_3$: Spouted Pots. [1/2]. Period III. (See p. 217).

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T.1b Fragment of a spouted pot possibly with a flared rim, rounded base and thin sides. No. 4489, NVS, X, 5.

T.1C Spouted pots with squat globular body and high neck. (Fig. 86)

This type has the following characteristics:
(1) height of spout either more or less than the level of the rim,
(2) designs IV*b*, XVII, XIX.

1C A complete pot, tubular spout rising higher than the level of the mouth, black bands on the rim and neck, design IV*b*. No. 8263, NVS, E, 9.

1C$_1$ Complete pot as above but the length of the tubular spout less, biconical squat body, neck splayed out, squared rim with a groove, spout jutting out in the interior showing how spouts were affixed later on, saggering base, design XVII. No. 7842, NVS, E, 13.

1C$_2$ Body fragment of a pot with the neck portion broken, slightly tapering spout, matt red surface, design IV*b*. No. 7387, NVS, E, 14.

1C$_3$ Fragment of a small pot with globular body, rim and spout broken. No. 3906, NVS, A, 10*a*.

Bowls (Fig 87)

The dominating variety is the standard carinated bowl so characteristic of Jorwe. Diameter between 350 mm. and 70 mm. Thickness of sides 3 mm. to 6 mm. Carination sharp as well as less pronounced. Series of smaller bowls of diminishing diameters. Three principal varieties: (*a*) edge falling out of the carination; (*b*) edge and carination in the same line; (*c*) edge falling in. Fabrics: Normal Jorwe and overbaked. Designs I*a*, I*a*2, II*b*, III*d*, III*f*, IV*a*, IV*f*, and XXIX; besides these, bands and potters marks on the inner surface. Saggering base, therefore, stands or pot-rests required.

Carinated bowls: (Fig. 87)

T.2a Fragment of a bowl with high and carinated walls, edge falling out of the carination point, rounded edge, design IV*f*. No. 394, NVS, E, 14.

2b Fragment of a bowl with saggering base, rounded out-going edge falling out of the carination point, overbaked, surfaces having a dark chalcolate wash, design Ia_2. No. 7831, NVS, C, 12.

2c Fragment, as above, but less concave sides, surfaces with scarlet-red wash, design Ia_2. No. 383, NVS, I, 6.

2d Fragment, edge and carination point in one line, blunted carination, design Ia_2. No. 7346, NVS, A, 10*a*.

2e Fragment, carination not sharp, edge rounded and out-going, grooves on the inner surface near the edge, design IIId_1. No. 5424, NVS, B, 9.

2f Fragment of a somewhat deep bowl with carination not pronounced, two bands on the inner surface near the edge, design II*b*, No. 6521, NVS. A, 10*a*.

Small bowls: (Fig. 88)

T.2g Fragment of a small bowl with thick sides, bevelled out edge, design Ia_2. No. 2456. NVS, D, 9.

2h Fragment of a bowl with thick sides, blunt carination, sides getting thinner towards base. No. 159, NVS, X, 5.

2i Fragment, small bowl, thin sides, edge rounded and out-going, No. 5807, NVS, G, 11.

2j Fragment of a shallow, squat bowl with blunted carination, sides with uniform thickness. Design Ia_1. No. 761, NVS, G, 11.

2k Fragment, bowl with sharp but thick carination, design Ia_2 No. 7787, NVS, D, 11.

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Bowl, with antelope design: (Fig. 88)

T.2l Fragment of a carinated bowl with rounded edge, matt surfaces, running antelopes with wavy horns depicted on outer surface, No. 5609, NVS, X, 5.

Bowls with double carination: (Fig. 88)

T.2m Fragment of a deep bowl with double carinated sides, rounded edge, design Ia_2. No. 5821, NVS, C, 9.

Spouted bowl: (Fig. 88)

T.2n Fragment of a bowl with concave sides and a stumpy spout 2 cm. in length, design I*a*. No. 3864, NVS, I, 5.
(Three other fragments were found. Nos. 6936, 97, 7003, Height of sides 42 mm. and 46 mm. Diameter of spouts 17 mm. and 20 mm.)

Rimless bowls: (Figs. 88, 89)

(*a*) *With straight sides:*

T.2o Fragment of a rimless bowl with straight sides, red wash, design Ia_1. No. 8363, NVS, I, 6.

2p Fragment as above but with a shallow groove on the outer surface, surfaces full of mica and quartz, design Ia_1. No. 7053, NVS, D, 10.

2q Fragment of a small bowl with rounded edge, straight sides, design Ia_2. No. 339, NVS, I, 4.

(*b*) *Sub-spherical bowls:* (Fig. 89)

T.2r Fragment of a sub-spherical bowl with bulging sides, rounded edge, surfaces, matt red, design Ia_1. No. 949, NVS, G, 13.

2s Fragment of a small bowl with bulbous edge, inner surface bright red-slipped. No. 2388, NVS, A, 10*a*.

(*c*) *Bowls with bulbous sides and slightly out-turned edge:* (Fig. 89)

T.2t Fragment of a big bowl with bulging sides slightly out-turned rounded edge, sides getting thinner towards the bottom, surface blotchy, design Ia_1. No. 3039, NVS, D, 8.

2u Fragment of a medium-size bowl with a slight depression below the edge on the outer surface, design IV*a*. No. 78, NVS, X, 4.

2v Fragment of a smaller bowl with bulbous sides, surfaces treated with a red wash. No. 3039*a*, NVS, D, 8.

(*d*) *Squat bowls:* (Fig. 89)

T.2w A complete specimen of a tiny bowl with a group of vertical strokes on the outer surface. No. 7108, NVS, G, 12.

2x Fragment, similar to above but with thick sides getting thinner towards base. No. 6250, NVS, C, 9.

2y Half fragment, bigger in size, thick base, rounded edge, design as on *T.2w* No. 6935, NVS, G, 11.

2A Fragment, bigger in size, design as on *T.2s* and Ia_1. No. 5385, NVS, D, 9.

2B Fragment, bowl, bulging sides of even thickness, rounded edge, design of straight vertical strokes. No. 6469, NVS, A, 10.

(*e*) *Bowls with bulbous sides and blunted carination:* (Fig. 89)

T.2C Fragment, out-turned rounded edge, sides bulbous at the turn, matt red surfaces, design Ia_1. No. 7221, NVS, A, 10*a*.

2D Fragment, similar to above, but very small. No. 6417, NVS, B, 9.

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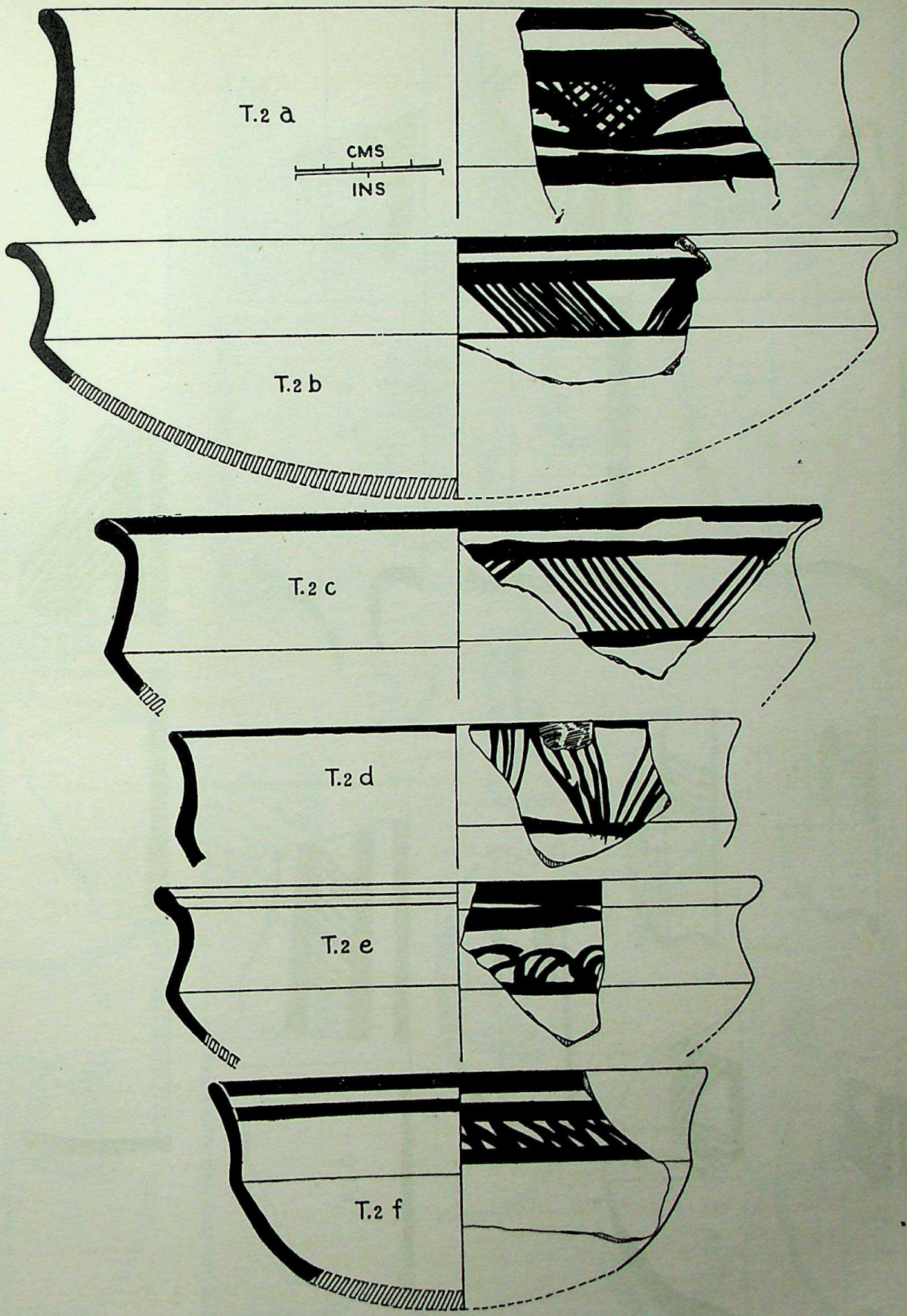

Fig. 87 : Types. 2a-2f. [1/2], Carinated Bowls. Period III. (See p. 217).

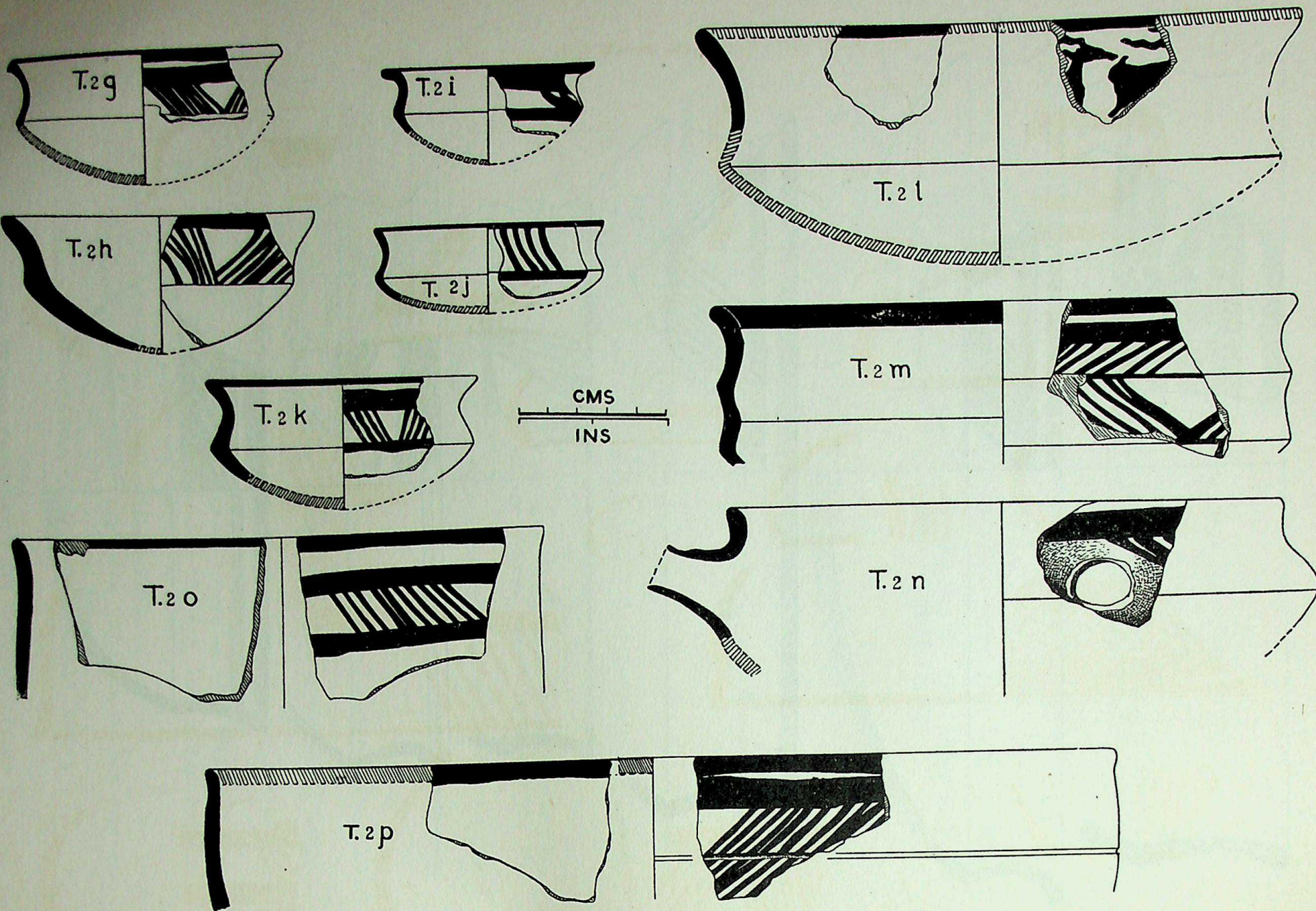

Fig. 88 : Types, 2g-2p. [1/2]. Small bowls (2g-2l); Double carinated (2m) ; Spouted (2n) ; Rimless (20-2p), Period III. (See pp. 217-18)

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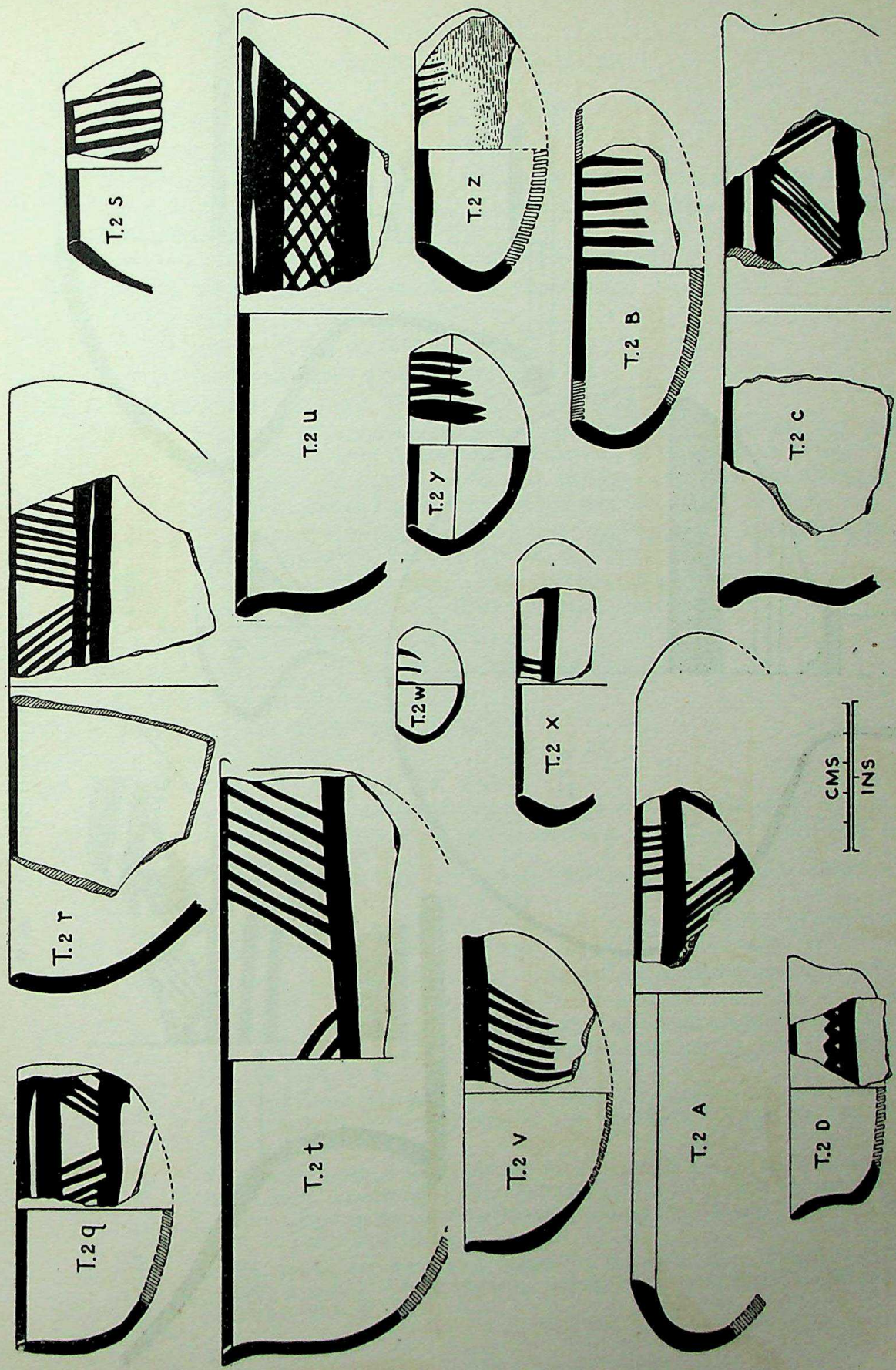

Fig. 89 : Types. 2q-2D [1/2]. Rimless bowls. Period III. (See p. 218).

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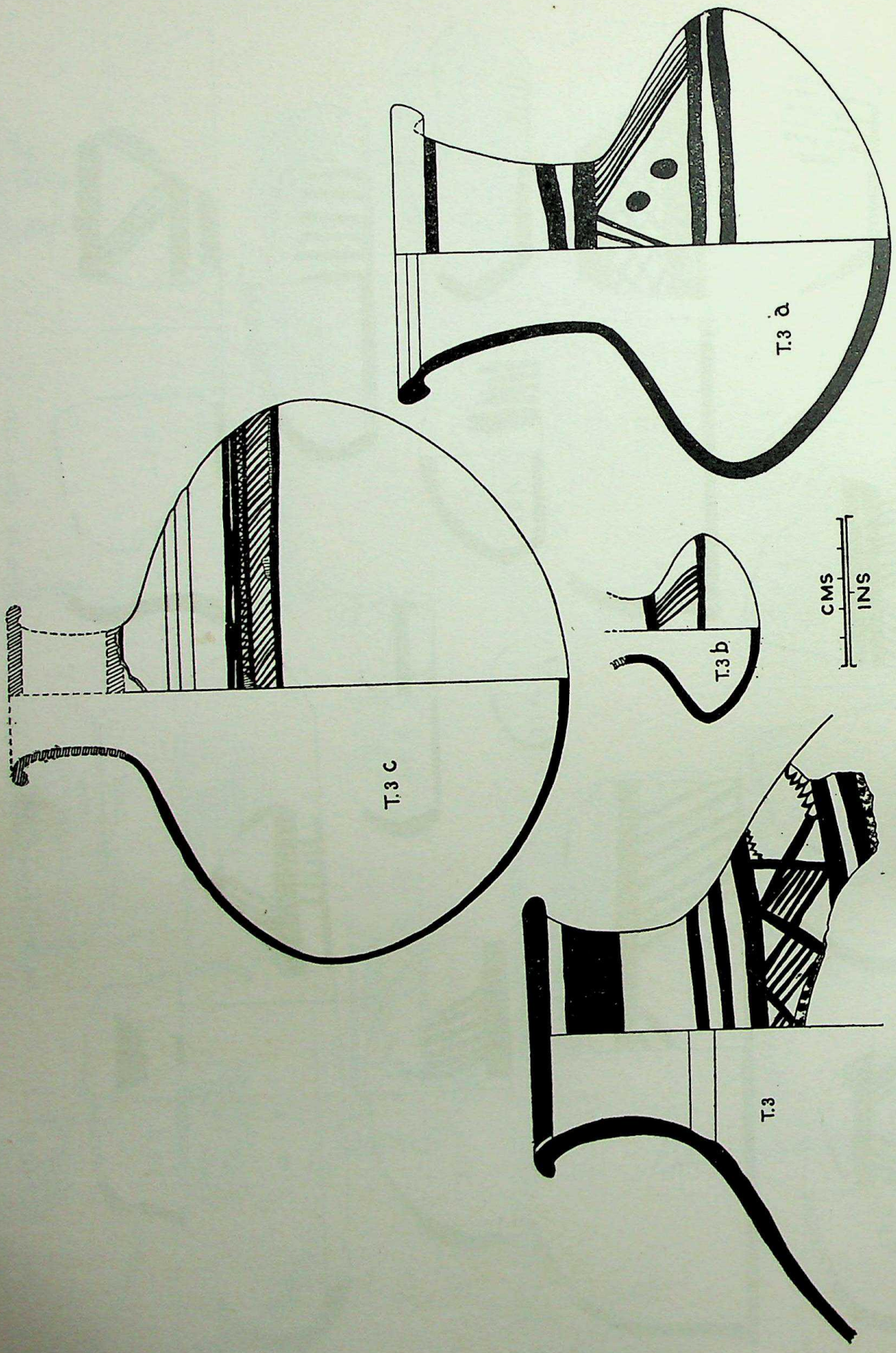

Fig. 90 : Types 3-3c [1/2]. High-necked vessels. Period III. (See p. 223).

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Type 3. High-necked vessels: (Fig. 90)

(1) Body either spherical, globular or biconical.

(2) Thickness between 6 mm. and 3 mm.: Diameter of mouth 140 mm. and 560 mm.

(3) Painting mostly at the neck; below the rim and on the beading of the rim; sometimes on the inner side of the rim and belly.

(4) Occurs in normal Jorwe fabric and in overbaked variety also.

(5) Rims: (*a*) broad neck with rounded out-turned edge,
(*b*) beaded out and out-turned,
(*c*) out-turned and bevelled out,
(*d*) out-turned and groove-beaded rim.

(6) Designs occurring: Ia_1, IV*d*, VII, XI*a*, XI*b*, XIX, XXI.

T.3 Fragment of a high-necked globular pot with beaded out rim, red wash, design IV*d* between bands, core compact red. No. 1015, NVS, E, 14.

3a A complete pot with saggering base, blotchy surface and beaded out rim, overbaked, design Ia_1 with two potter's dots. No. 7771A, NVS, E, 14.

3b A small pot with biconical squat body, saggering base, high tubular neck broken, scarlet-red wash, design Ia_2. No. 3503, NVS, A, 10*a*.

3c A large pot with globular body possibly high-neck and beaded out rim, painting on the belly. No. 3503*a*, NVS, A, 10*a*.

Type 4. Short-necked vessels: (Fig. 91)

(*a*) Body probably globular or spherical or squat biconical.

(*b*) Body painted as well as plain.

(*c*) Real Jorwe as well as overbaked fabric.

(*d*) Rims generally beaded out.

(*e*) Designs: I*a*, II*b*, III*c*, IV*d*, IV*e*, XV, XXI.

T.4 Fragment of a short-necked vessel with probably globular body with out-turned rounded rim, outer surface having a red slip, core red, design II*b* and XXI. No. 1012, NVS, E, 14.
(Diameters of this type vary between 25.4 cms. and 13.6 cms. and thickness of the body, 7 mm. and 5 mm.)

4a Fragment of a globular vessel with constricted neck and beaded rim, outer surface having a dull chocolate wash, core light red. No. 6538, NVS, A, 10.

4b Fragment, possibly globular body with straight pointed edge, outer surface having red slip. Design Ia_1. No. 7099, NVS, E, 12.

4c Half of a pot with squat biconical body, out-turned rounded rim, surfaces matt red, no painting. (In painted varieties, designs I*a*, and II*a* occur). No. 119, NVS, Y, 6.

4d Fragment, small size pot, out-turned edge, thin sides, short neck, belly as of *T. 4c*, outer surface red-slipped and burnished. Design Ia_2. No. 968, NVS, H, 11.

4e A complete vessel with constricted neck, rounded rim, a slight carination at the belly, rounded base. The bottomseems to have been fashioned in a concave mould as the inner surface shows finger dips. Design Ia_1. No. 4245, NVS, X, From Burial Urn.

4f Similar to *T.4c* above but with design No. Ia_2 on the outer surface, two dots (potter's marks?). (Three biconical copper beads were found in this pot.) No. 968*a*, NVS, H, 11.

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Type 5: Basins (Fig. 92)

(*a*) Mostly unpainted, save a thick band on the edge.

(*b*) Diameters: 22 cms. and 31.6 cms.

(*c*) Thickness: 7 mm. and 44 mm.

(*d*) Light red wash.

(*e*) Rims beaded out, body bulbous, rounded bottom.

T.5 Fragment, small basin, bulging body, slightly outgoing rounded rim, surfaces having a light red wash, core red. No. 935, NVS, F, 11.

5a Fragment, as above, but with out-turned rounded rim. No. 6036, NVS. C, 9.

5b Fragment, similar to above, but with out-beaded rim. No. 78, NVS, Y, 5.

Type 6: Dishes or deep bowls(?) (Fig. 92)

It is not possible to be definite about this shape. It may be pointed out here that dishes are more or less absent in this ware. Moreover, no base fragments of dishes were found in the excavations. As such, it would be better to prefer the latter designation.

(1) Very few sherds in all. They occur mostly in the upper layers of the Chalcolithic.

(2) Diameters: 26.6 cms. and 20 cms. Thickness: 6 mm. and 4 mm.

(3) Light red or scarlet wash only.

(4) Painting on the outer surface and on the edge only. designs: I*a*, III*C*, XXV and bands.

T.6 Fragment of a dish with bulging sides getting thinner towards base, edge rounded, red wash, design III*C*. No. 7628, NVS, F, 12.

6a Fragment, surfaces rough, in-going bulbous edge, bulging sides. No. 2888*a*, NVS, C, 10.

6b Fragment, thin bulging sides, rounded edge, design I*a*. No. 5667, NVS, C, 13.

6c Fragment, similar to *T.6* but bulbous edge, blotchy surfaces, design I*a*. No. 7830, NVS, C, 12.

Type 7: Squat pots: (Fig. 93)

(1) Diameters: 22.6 cms. and 29 cms.

(2) Thickness: 3 mm. and 4 mm.

(3) Designs: II*b* and bands. Short vertical strokes on the inner rim.

T.7 Fragment of a squattish pot with bulging sides and out-turned rounded rim, surfaces having matt crimson-red wash, core dark brown. No. 5403, NVS, D, 9.

Type 8: Ring-stands: (Fig. 93)

(*a*) Diameters: 20.4 cms. and 18 cms.

(*b*) Thickness: 7 mm. and 5 mm.

(*c*) Design I*a*2.

T.8 Fragment of a stand with concave sides, surfaces treated with red wash, outer surface smooth, wheel made and unpainted. No. 5567, NVS, X, 5.

8a Similar to above but with bands in black on the outer surface. No. 6515, NVS, A, 9.

Type 9: Stemmed stands: (Fig. 93)

T.9 Fragmentary piece which might be either the base part of a stepped stand with a hollow stem, or if held the other way, can be a broad mouth piece of a vessel with a hollow neck, surface having a red wash, design Ia_1 and bands, core compact red. No. 5792, NVS, Y, 6.

9a Fragment of a short hollow stemmed stand with solid concave base (Cf. NVT). No. 5093, NVS, F, 14.

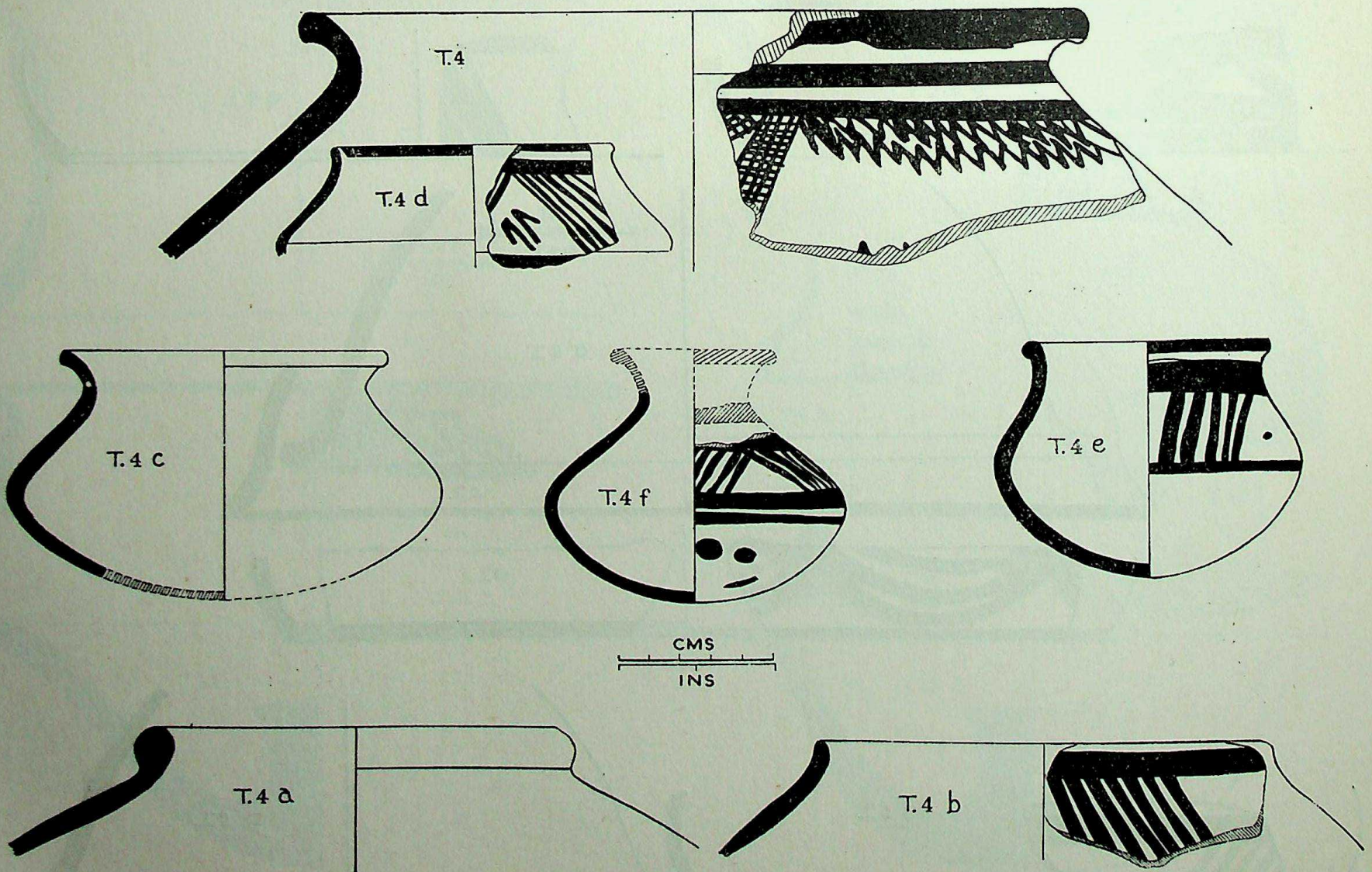

Fig. 91 : Types. 4-4f. [1/2]. Short-necked Vessels. Period III. (See p. 223).

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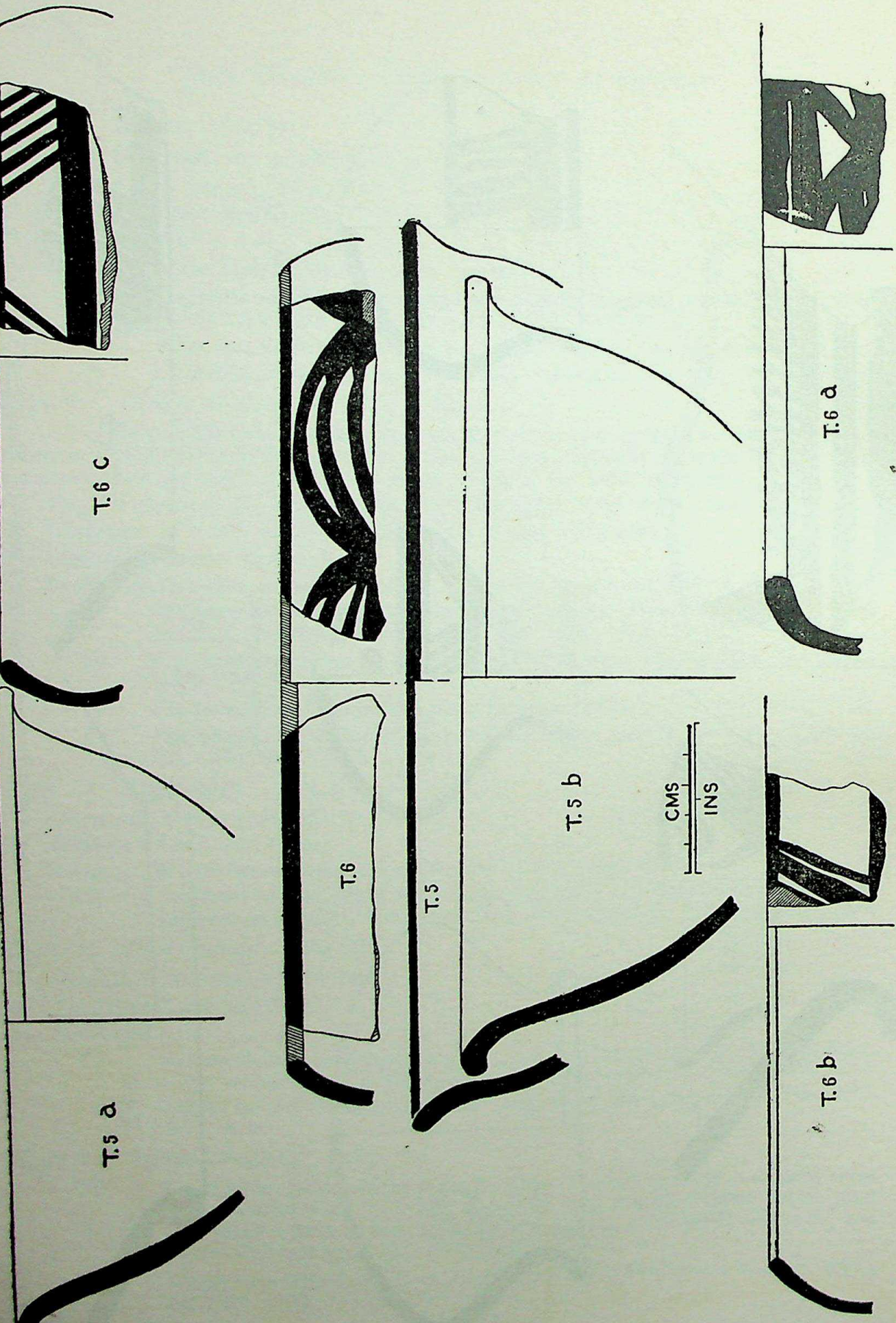

Fig. 92 : Types 5-6c [1/2]. Basins (5-5b), Deep Bowls (6-6c). Period III. (See p. 224).

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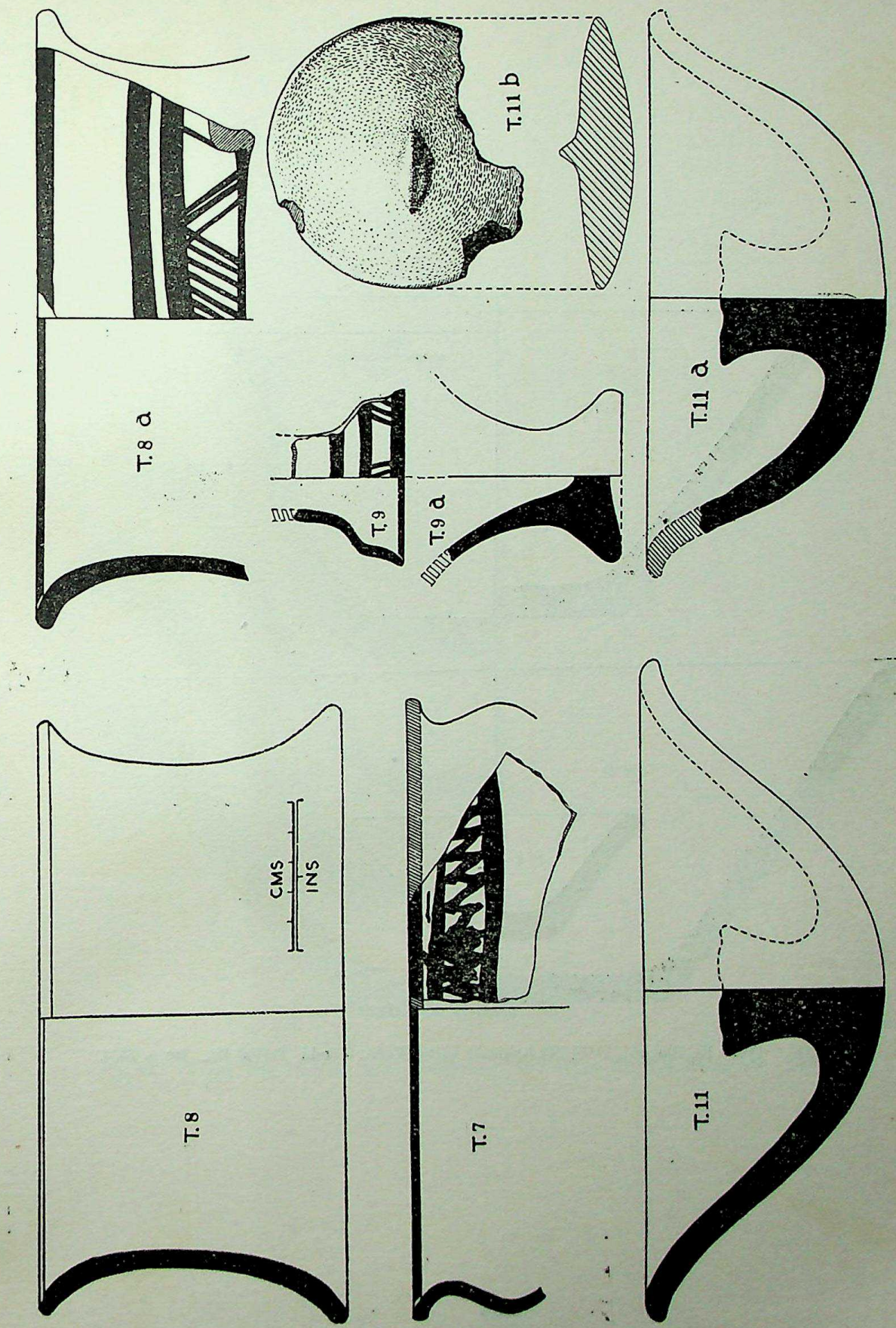

Fig. 93 : Types. 7, 8-8a, 9-9a, 11-11b. [1/2]. Squat pot 7 ; Ring Stands 8-8a ; Stemmed stands 9-9a ; (Burnished grey ware). Lids 11-11b Period III. (See pp. 224, 233).

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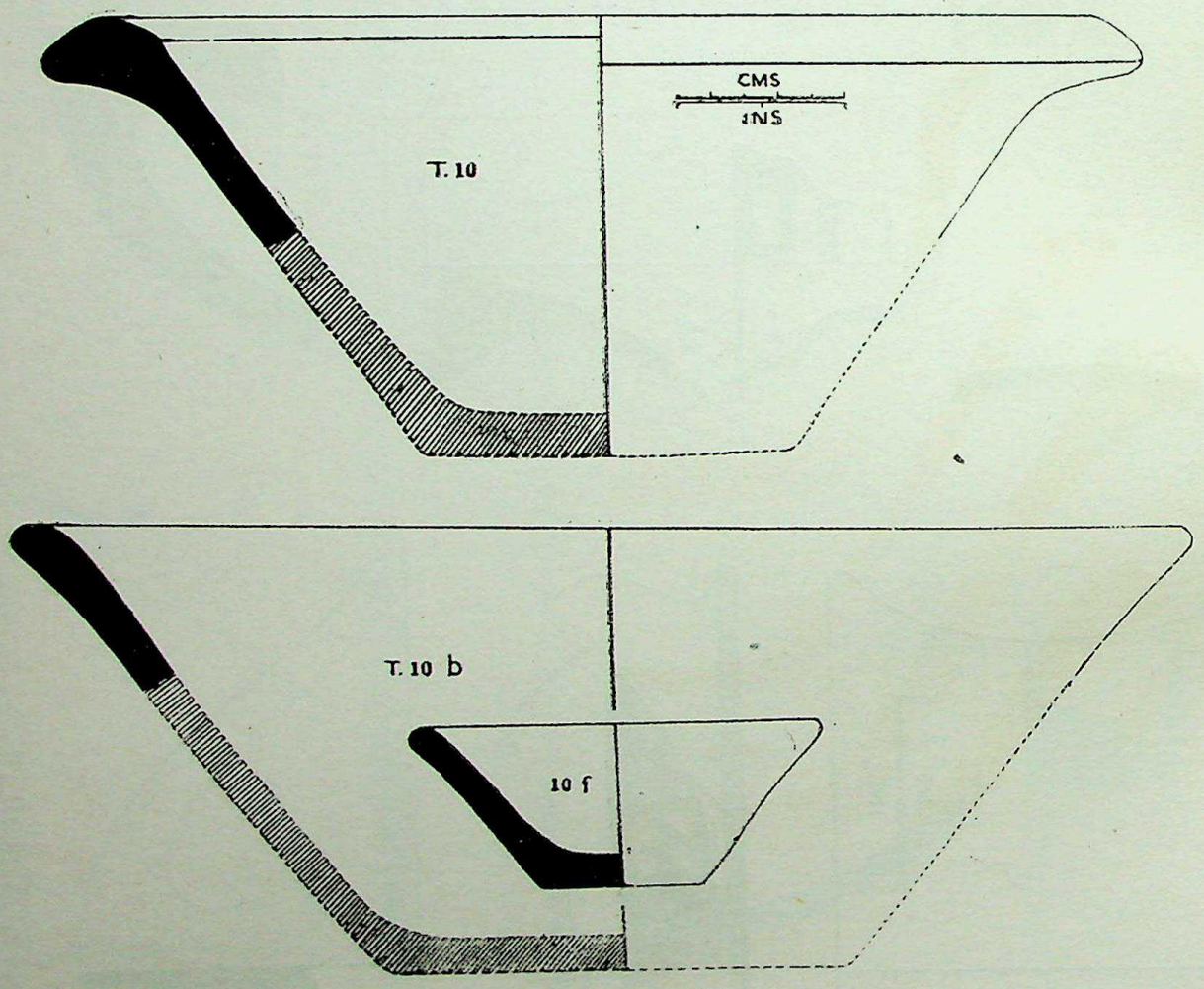

Fig. 94 : Types 10, 10b, 10f. [1/2]. Red-painted Grey Ware, Kuṇḍā. Period III. (See p. 233).

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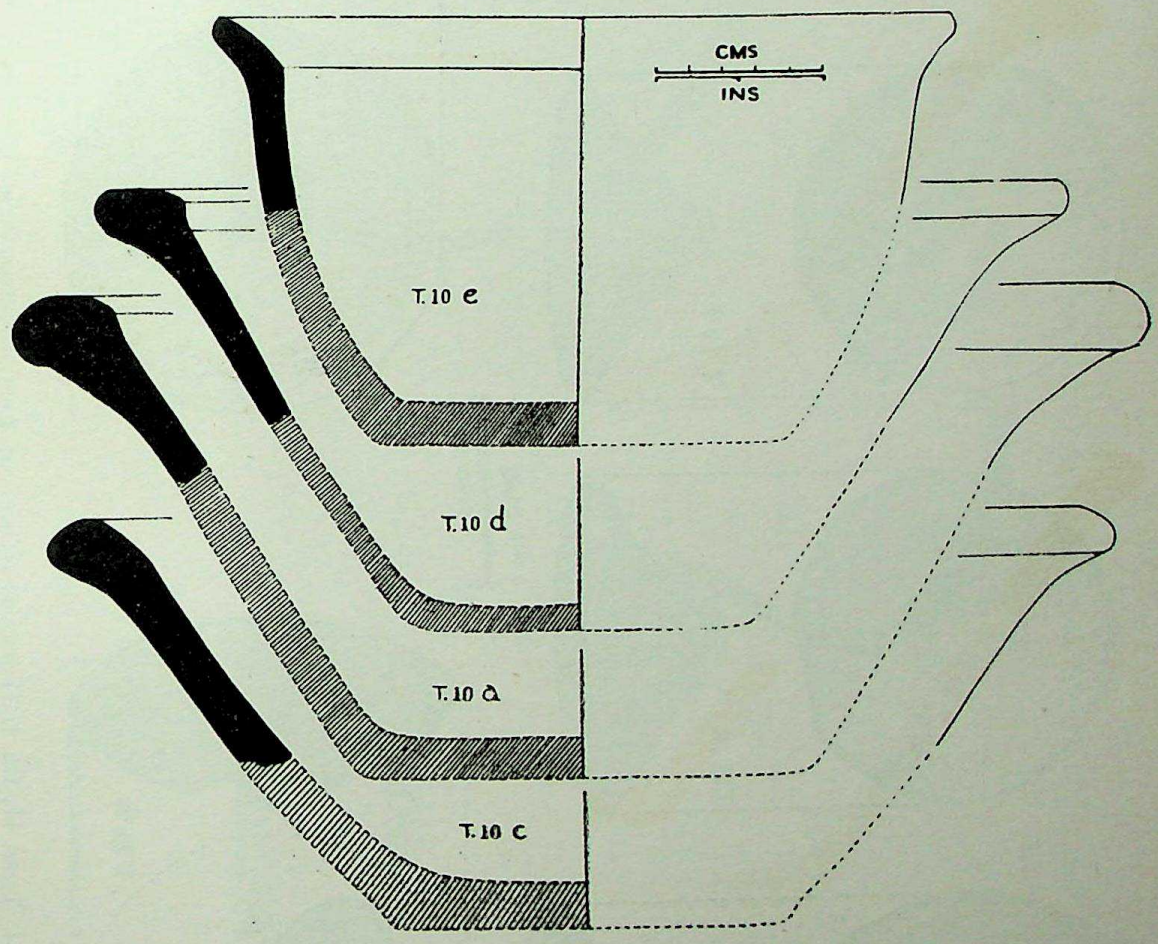

Fig. 95 : Types. 10a, 10c-10e. [1/2]. **Red-painted Grey-ware. Kuṇḍās. Period III.** (See p. 233).

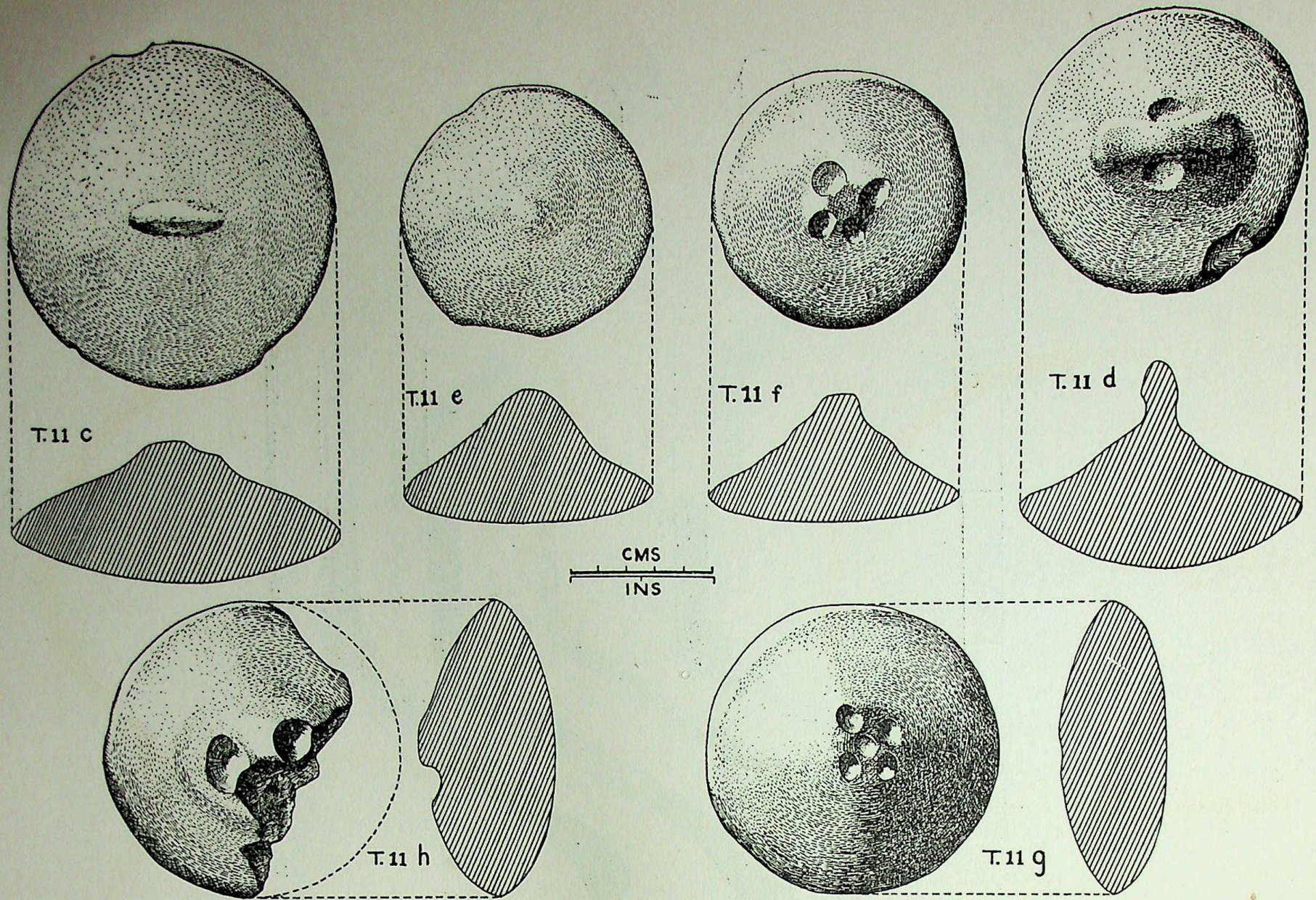

Fig. 96 : Types. 11c-11h. [1/2]. Burnished Grey-ware. Lids and Covers. Period III. (See p. 233).

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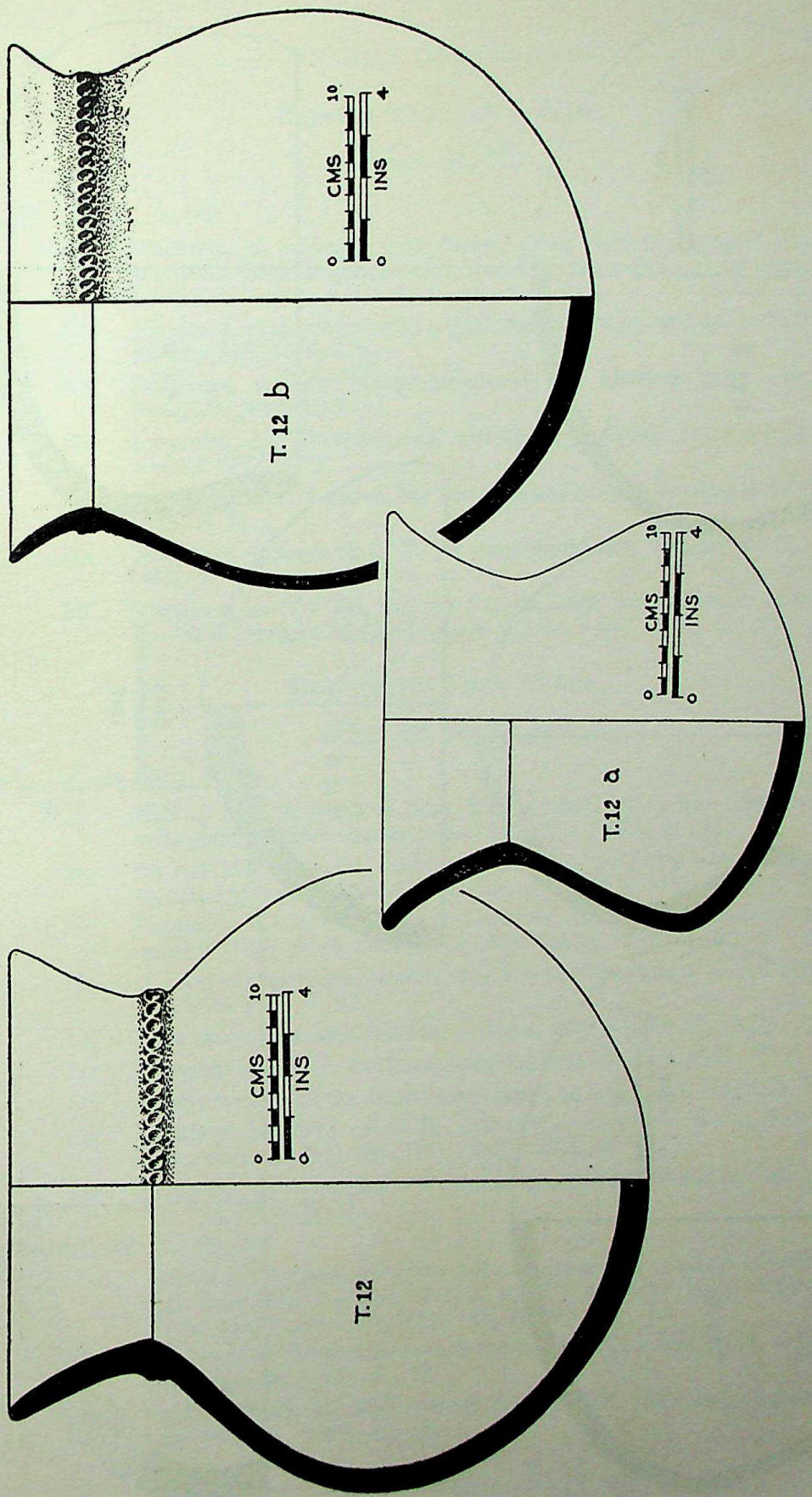

Fig. 97 : Types 12-12b [1/4]. Burnished Grey-ware. Burial Urns. Period III. (See p. 233).

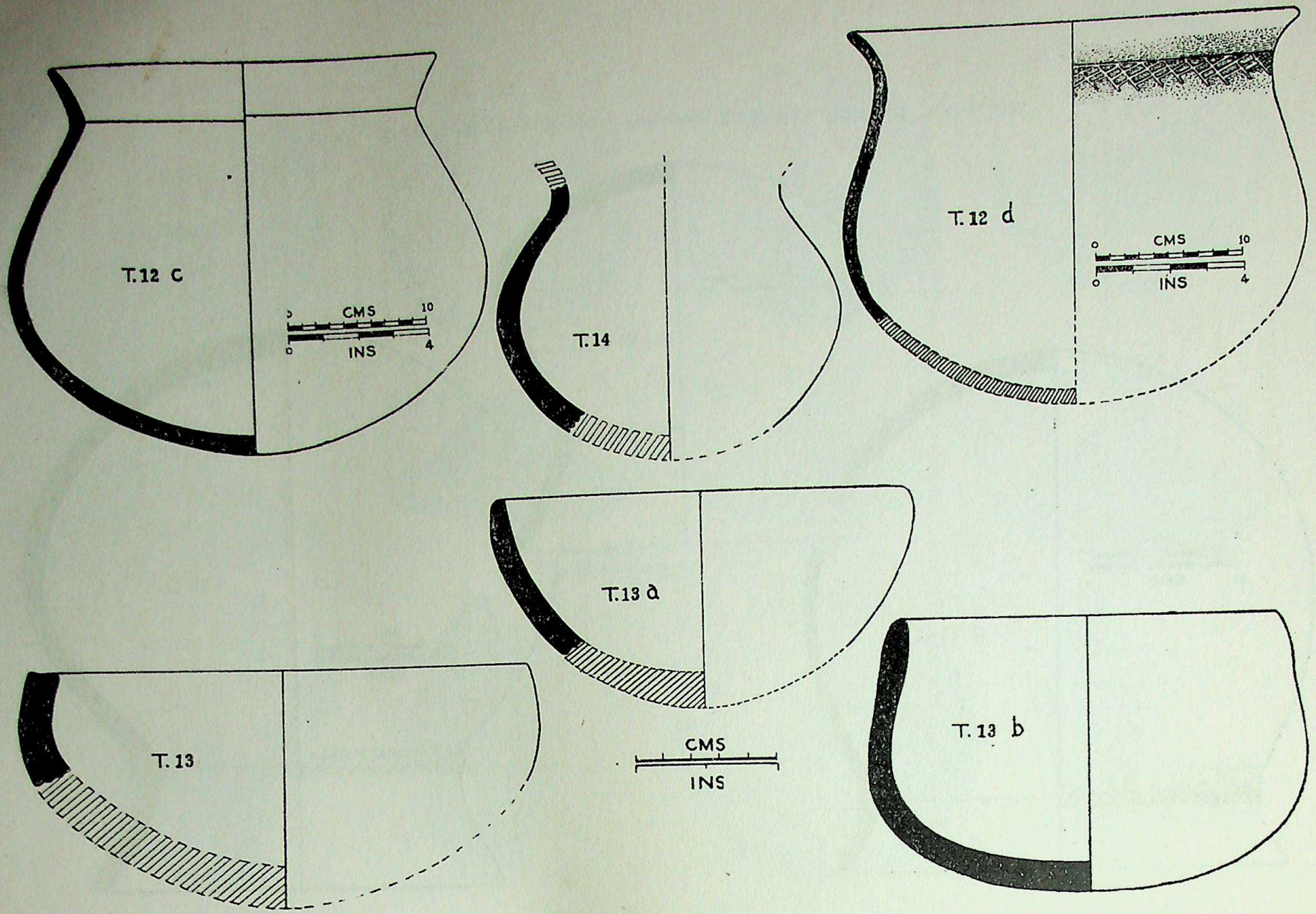

Fig. 98 : Types 12c-14 [1/2]. Burial Urns (12c-d). Coarse Grey ware : Bowls (13-13b), Globular pot (14). Period III. (See p. 234).

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POTTERY OF PERIOD III

RED-PAINTED GREY WARE

(Figs. 94, 95)

Kuṇḍās: (Figs. 94, 95)

T.10 Fragment of a *kuṇḍā* with flaring sides, outgoing rounded edge partially bevelled inside, surfaces blotchy, traces of red paint on the edge. No. 367*a*, NVS, I, 6.

10a Fragment, as above but with a thick bulbous edge, surfaces partially burnished. No. 367, NVS, I, 6.

10b Fragment, surfaces highly burnished and blackish grey, edge rounded. No. 3844, NVS, B, 9.

10c Fragment, as *T.10* above, but with the edge slightly flared out and rounded. No. 98. NVS, X, 5.

10d Fragment, as *T.10* above, but the edge not sharply bevelled inside. No. 1009, NVS, E, 14.

10e Fragment, surfaces as of *T.10b*, edge flared out, bevelled inside. No. 3897, NVS, B, 9.

10f Fragment, as of *T.10b*, but more intact, with rounded edge, smaller in size, flat base, surfaces highly burnished. No. 8034, NVS, E, 12.

BURNISHED GREY WARE

(Figs. 93, 96, 97, 98)

Lids and Covers (Figs. 93, 96)

T.11 Half of a lid with round base, flaring sides, out-turned edge, central knob with eight shallow depressions. No. 7039, NVS, H, 11.

11a Almost half of a lid, burnished surfaces, perfectly semi-circular outline, central knob with three depressions extant. No. 3581, NVS, I, 6.

11b Fragment of a circular lid with biconvex section and a pinched lump on the outer surface, pinch ornamental. No. 3581*a*, NVS, X, 5.

11c A complete specimen, similar to *T.11b* but heavy and with a pinched hold. No. 8228, NVS, F, 12.

11d A complete specimen, blotchy surfaces, with a hold. No. 8228, NVS, F, 12.

11e Complete specimen, flat base, lump-knob at top. No. 6871, NVS, H, 10.

11f As above but with the knob finger-tipped on four faces. No. 8729, NVS, F, 12.

11g Complete biconvex specimen, brown-grey surfaces, five shallow decorative depressions on one face. No. 7367, NVS, H, 11.

11h Fragment, as above but with the pinched hold formed by two depressions. No. 712, NVS, H, 11.

Burial Urns (Figs. 97, 98)

T.12 Almost a complete specimen but crumbled and cracked to pieces, blotchy grey burnished surfaces, flaring mouth, globular body, finger-tip design at the constricted neck. Urn No. 29, NVS, F, 13.

12a As above, but smaller in size, flared mouth, slight carination, saggering base. Urn No. 30, NVS, F, 13.

12b As *T.12* above, but with a short flared mouth and body slightly elongated. Urn No. 25, NVS, F, 13.

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T.12c As *T.12b* above, but with bulging sides and a short mouth. Urn No. 24, NVS, F, 13.

12d Fragment, as *T.12*, but with the rim out-turned and having rounded edge, incised flag-design. Urn No. 28, NVS, F, 13.

Coarse Grey Ware

(Fig. 98)

Bowls

T.13 Fragment of a small bowl with thick sides, flat unburnished surfaces. No. 8256, NVS, F, 12.

13a Fragment of a sub-spherical bowl with rounded edge, sides getting thicker towards the base, inner surface burnished. No. 8249, NVS, F, 12.

13b A complete deep bowl with the sides bulging at the bottom and getting thicker, outer surface blotchy. No. 8249*a*, NVS, F, 13. From Burial No. 30.

Globular Pot

T.14 Fragment of a globular pot with out-turned edge, inner surface and outer bottom coarse grey. No. 366*a*, NVS, G, 11.

Coarse Red Ware

(Figs. 99, 100, 101, 102)

Doughs (Fig. 99)

T.15 Fragment of a dough plate with slightly raised edge, coarse red surfaces, inner surface smooth (due to use), outer and nether surface having a clear impression of a bunyan leaf (over which the dough was fashioned or deposited when not dried). No. 8490, NVS, X, 5.

15a Fragment as above but with straight sides and sharp edge. No. 8259, NVS, F, 12.

15b Fragment, flat base, raised walls, rounded edge. No. 363, NVS, I, 6.

15c Fragment, out-turned rounded edge, somewhat discoid base, inner surface smooth, No. 737, NVS, F, 12.

15d Fragment, thick-walled, flat top, bevelled inside and having slanting and wavy incisions, flat base. No. 296, NVS, C, 13.

Stands: (Fig. 100)

These are different from the pottery ring stands described as T.8 above. These pot-rests are very coarse with a broad and flat under-surface.

T.16 Fragment of a pottery stand, hand-made, with a flat and broad base, walls tapering to a rounded edge, possibly for heavy vessels. No. 8471, NVS, F, 13.

Lids: (Fig. 100)

Several fragmentary pieces with a central perforation and domical outline were found. These might be lids to cover storage jars with big open mouths. The central perforation might have been used to lift the cover by inserting a finger into it, or as is more likely, to allow steam to pass through

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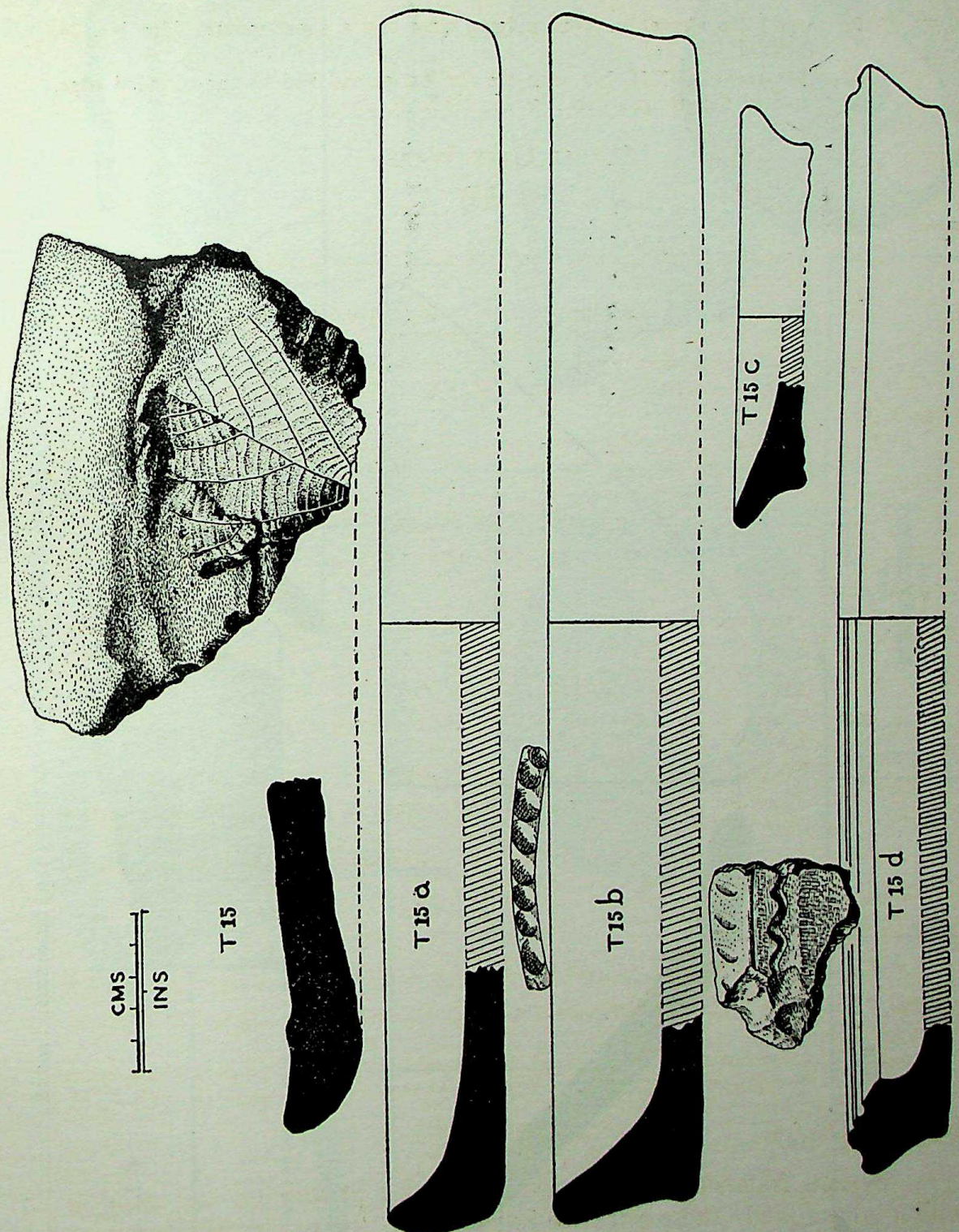

Fig. No. 99 : Types 15-15d, [1/2]. Coarse Red Ware. Dough plates. Period III. (See p. 234).

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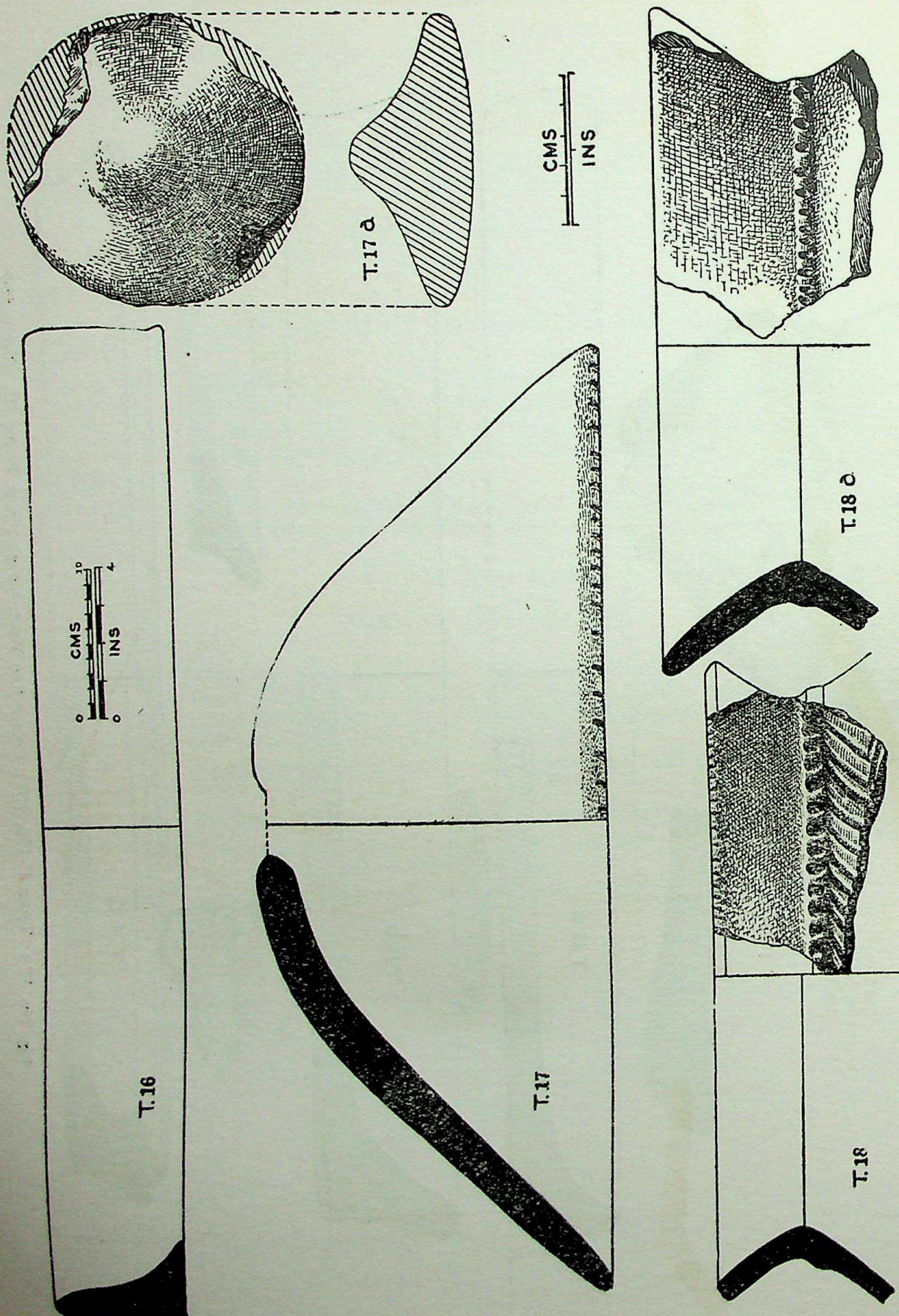

Fig. 100 : Types 16-18a [1/2]. Stand (16) ; Lids (17, 17a); Globular vessels (18, 18a). Period III. (See p. 234, 239).

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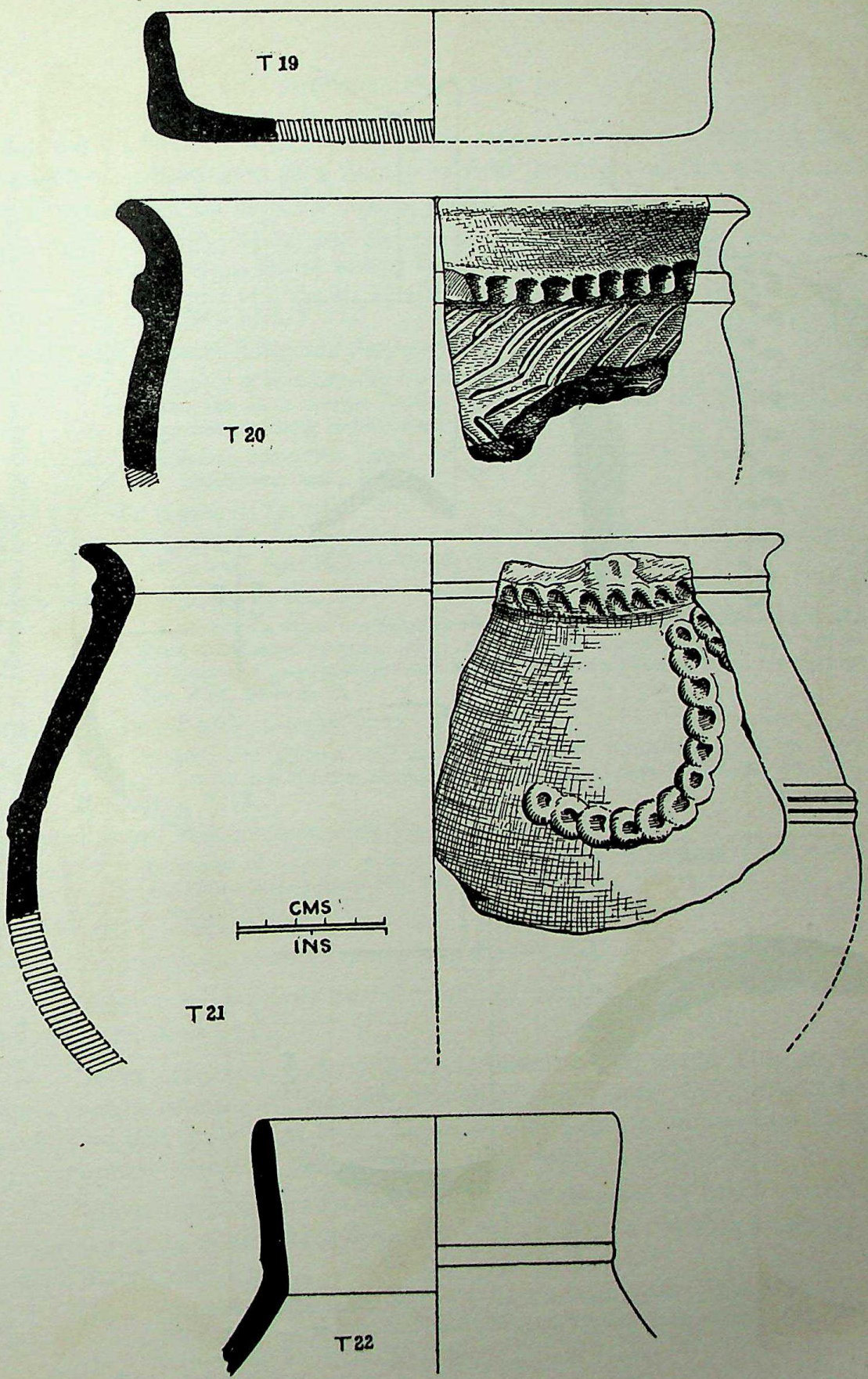

Fig. 101 : Types 19-22 [1/2]. Dish (19); Vessel with straight sides (20); Handi (21); Globular vessel (22). Period III. (See p. 239).

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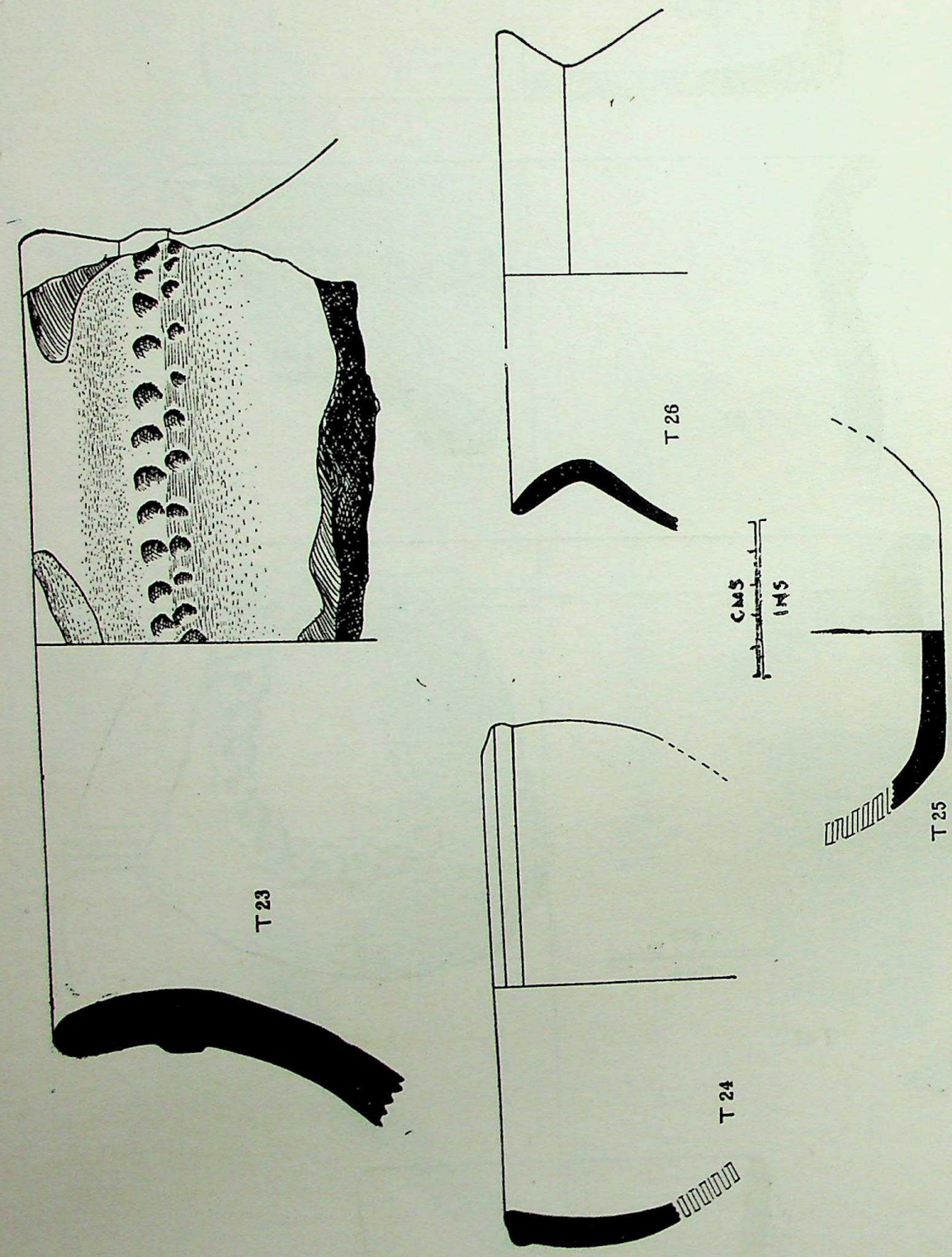

Fig. 102 : Types 23-26 [1/2]. Storage jar (23) ; Orange Ware ; Bowl (24); Globular vessel (25); Black-and-red ware : Globular vessel (26). Period III. (See pp. 239-40).

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when the lid covered a pot with boiling water. Another possibility is that it might have been used as a funnel—if held inverted—so that the poured liquid could pass through the central perforation.

T.17 Half of a lid (?), with smooth red surfaces, somewhat flaring sides, central perforation, incised slanting lines on the edge. No. 1003, NVS, E, 14.

17a Fragment of a circular lid with the outer surface having a tapering knob. No. 7905, NVS, F, 12.

Vessels with globular body and flared rim: (Fig. 100)

T.18 Fragment of a vessel with flared mouth (as in *T.12*) and probably globular body, the outer surface having incised fingertip and chevron design, the edge having short incised lines. No. 7309, NVS, F, 11.

18a Similar to above but bigger and outer surface smooth, fingertip design at the constricted neck. No. 734, NVS, E, 12.

Dish (?) -like vessel: (Fig. 101)

T.19 Fragment of probably a dish (?) with thick walls, rounded edge, flat base, gritty core. No. 1028, NVS, E, 14.

Vessel with straight sides and out-turned edges: (Fig. 101)

T.20 Fragment of a vessel having probably elongated body with somewhat straight sides, out-turned rounded edge, outer surface coarse and having a design of fingertip on an applique band capping shallow chevrons to left, core gritty. No. 7098, NVS, E, 14.

Handi-like vessel with globular body: (Fig. 101)

T.21 Fragment of a vessel with coarse red surfaces, rounded bottom, the outer surface having festoons of fingertip decoration on applique bands. No. 7069, NVS, E, 14.

Globular vessel with straight-walled mouth: (Fig. 101)

T.22 Fragment of a vessel with probably globular body, straight-walled mouth and coarse red surfaces. No. 1022, NVS, E, 14.

Storage jars: (Fig. 102)

Fragments of several storage jars were found.

These were probably used for storage purposes or as in some cases to cover the dead adult.

These are hand-made with thick sides built upwards. Due to the sheer weight of such storage jars and their small base, they were either embedded half in the floor of the house or were kept on stands. Such being the stationary nature of their existence, these required no handles.

The decorations are limited, restricted as they are to broad fingertip designs or series of punctured dots. The latter, it may be noted, is a favourite device from Jorwe.

T.23 Fragment of the upper part of a thick storage jar with slightly out-going rim and a double row of fingertip design on the outer surface. No. 1055, NVS, F, 12.

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Orange Ware
(Fig. 102)

Bowl

T.24 Fragment of a sub-spherical rimless bowl with a flat top, sides getting slightly thinner towards the base. No. 7849, NVS, B, 10.

Globular vessel (?)

T.25 Fragment of the flat base of probably a globular vessel. No. 7842, NVS, B, 10.

Black-and-red Ware
(Fig. 102)

Globular Vessel

T.26 Fragment of a globular vessel with out-turned rim, inner surface black-burnished, outer reddish brown on the belly and possibly at the bottom, core gritty and black. No. 364, NVS, I, 6.

Miscellaneous (Fig. 103)

Type A A huge storage jar, almost intact, coarse red, tapering towards base, hand-made, finger-tip decoration at the constricted neck, found below burial. NVS, Tr, A, 10*a*.

B An intact specimen, bottle, rounded base, high sides, open mouth, red wash, on the exterior small decorative lug. No. 8356, NVS, F, 13.

C Fragment, burnished grey ware, a square pot (?), flat edge and base, vermilion-painted on the edge. No. 5734, NVS, I, 6.

Decorated Sherds
(Figs. 104, 105, 106)

The Chalcolithic layers yielded on the whole few sherds bearing decorations. These could be grouped into two principal categories :

(*a*) sherds with incised decoration, and

(*b*) sherds with applique decorations.

The first group is characterised by either regular or random incisions. In both these cases, however, the incisions are deep and seem to have been made with sharp points.

In the case of the latter, the applique bands are further punctured with dots, a device favourite at Jorwe. Plain applique bands seem to be rare.

Incised Decorations: (Fig. 104)

No. 1 Fragment of the belly of probably a globular pot, coarse red, outer surface having deep slanting random incisions. No. 7148, NVS, F, 11.

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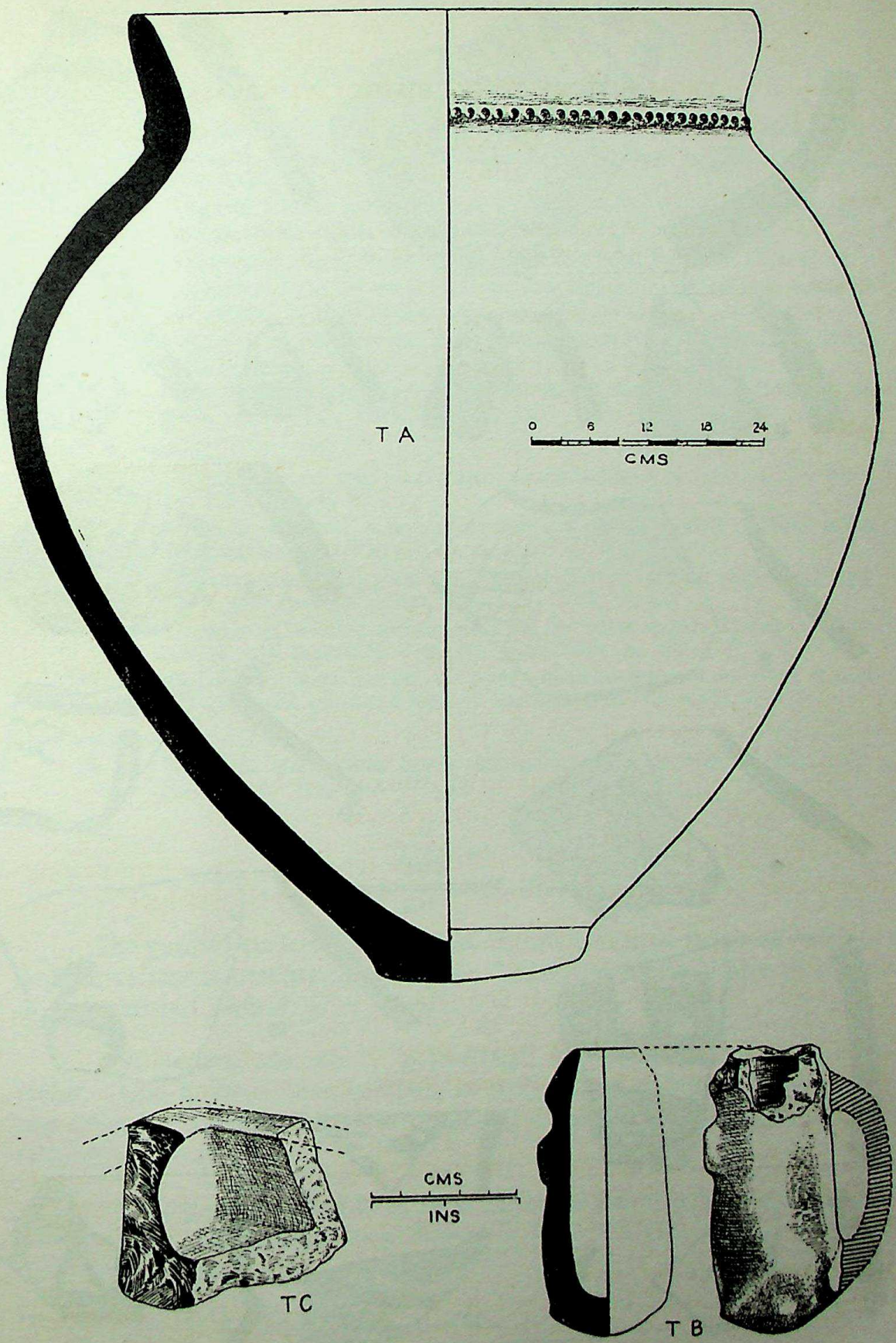

Fig. 103 : Types A-C [1/2]. Storage jar (A), Bottle (B), Squarish pot (C). Period III. (See p. 240).

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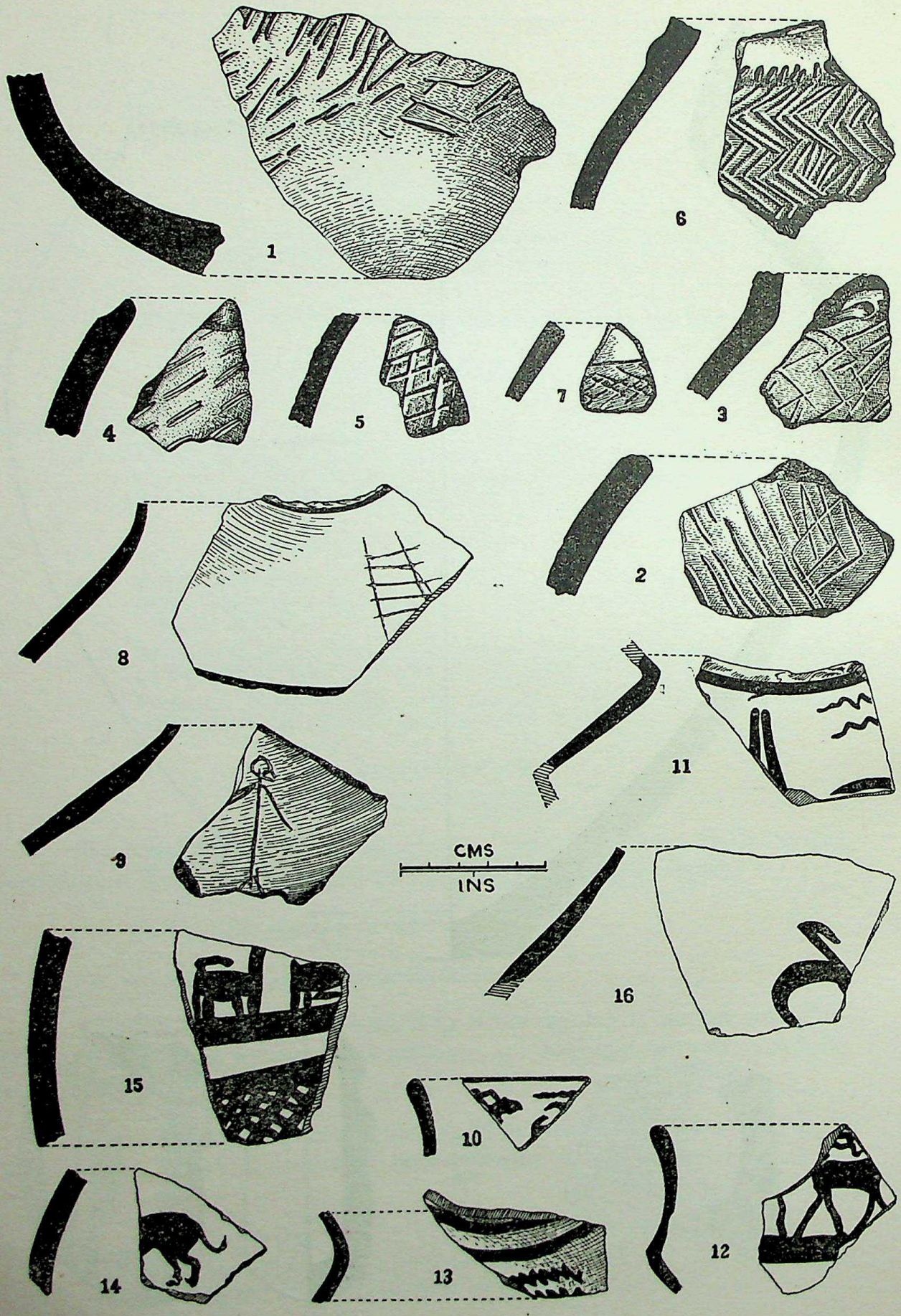

Fig. 104 : Decorated Sherds. [1/2]. Incised (1-8) ; Animal Figures (10-16) ; Human Figure (9). Period III. (See pp. 242-244).

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No. 2 Fragment, coarse red, vertically slanting incisions. No. 8223, NVS, F, 12.

No. 3 Fragment, coarse red, outer surface having random incisions. No. 5062, NVS, B, 10.

No. 4 Fragment, coarse grey-brown ware, outer surface having pairs of short slanting incised lines. No. 7313, NVS, F, 11.

No. 5 Fragment, as above, design of incised hatched lines. No. 7967, NVS, F, 12.

No. 6 Fragment, coarse red ware, outer surface having zigzags combed vertically and capped by short incised lines. No. 4947, NVS, B, 9.

No. 7 Fragment, grey-brown ware, incised design as on No. 7967 above. No. 6783, NVS, G, 11.

No. 8 Fragment of a spouted pot with flared mouth, incised ladder-design on the outer surface. No. 7904, NVS, F, 12.

Applique decorations: (Fig. 106)

No. 1 Fragment, coarse grey ware, outer surface having a curved applique band. No. 1025, NVS, E, 14.

No. 2 Fragment, as above, outer surface having a pair of vertical applique bands with incisions. No. 7304, NVS, F, 11.

No. 3 Fragment, coarse red ware, outer surface having vertical, parallel applique bands with fingertip design. No. 8237, NVS, F, 12.

No. 4 Fragment of a thick storage jar with the outer surface having applique volutes with punctured dots. No. 720, NVS, A, 10*a*.

No. 5 Fragment as above, but with the outer surface having a group of five vertical appliques with punctured dots at intervals. No. 122, NVS, X, 5.

Impressed Decoration: (Fig. 106)

No. 6 Fragment, one surface having impressions of reed matting. No. 1063, NVS, F, 12. [*Fig. 105, No. 1*].

DESIGNS

(Figs. 104, 106-109)

The painted pottery from Nevasa reveals a limited range of painted designs, so that it becomes monotonous. These designs are drawn in black over a matt red surface, as at Jorwe[13].

The designs are mostly geometrical, predominated by lines and bands. These in some cases combine to evolve more elaborate decorations like triangles, zigzags, diamonds, lozenges, loops and semi-circles, as the following list will show.

The next group consists of naturalistic designs which is represented by very few sherds. One such design is No. XXXIII which perhaps represents a plant.

13. See SANKALIA and DEO, *op. cit.*, pp. 160ff.

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The only evidence of human figurisation is sherd No. 5646 which depicts a stylised human figure in graffiti. The face of the figure has a beak and the entire sketch is linear.

Antelope is one of the animals represented on Nevasa pottery. These are shown running one after the other with raised tails which is supposed to be an indication of their mating season[14]. In almost all the cases, these are shown wavy-horned and may be conveniently termed as antelopes. The other animal depicted is a dog or a dog-like animal. Unfortunately the sherd is incomplete and hence only the rear portion is extant. Inspite of that, however, the deer and the dog are painted most realistically. The fleshy curves of the body, the turned tails, the slender legs and the dynamic postures make these depictions realistic and lively.

Apart from these realistic depictions, the artisans of Chalcolithic Nevasa indulged in stylised paintings on their pottery. These show the animals in a stationery pose and show attempts of symbolising rather than drawing animals. Hence it is not possible to name the animals.

Of all these animal paintings, that of the dog is the most important. The dog is known to be the earliest domesticated animal when man started to lead a settled life from the Neolithic times. Skeletal remains of a dog have been found along with human burials at Langhnaj in Gujarat. The depiction of a dog, therefore, on a pot shows that the Chalcolithic man of Nevasa had by now learnt the domestication of animals. He, therefore, probably thought it fit to immortalise his constant companion which was a part and parcel of his daily life. The find of a dog's jaw in a child burial at Nevasa corroborates the above statement.

Animal designs: (Fig. 104)

No. 10 Fragment of a carinated bowl with two antelopes running to the right, one after the other. No. 5609, NVS, X, 5. (See *T.2 l* above) [*Fig. 151, No. 2*]

No. 11 Fragment of a carinated vessel with design probably similar to above, No. 5465, NVS, X, 5.

No. 12 Fragment of a carinated bowl with the body and legs of an antelope walking left. No. 163, NVS, X, 5.

No. 13 Fragment as above but of short necked globular pot showing extremely wavy horns. No. 5467, NVS, X, 5.

No. 14 Fragment of probably a globular pot with the outer surface having a wash over which are seen the body, two rear legs and the curved tail of a dog. No. 3926, NVS, A, 10*a*. [*Fig. 105, No. 2*]

14. See ANSARI, SK.Z., 'Spiral-horned Antelope motif in the Chalcolithic Pottery of Nevasa and Western Asia', *BDCRI.*, Vol. XVIII, (1957), pp. 110-116. For details of the dog painting, See SANKALIA, H. D., A Unique Realistic Painting of the Chalcolithic Period in the Deccan, *Belvalkar Felicitation Volume*, Banaras, 1957, p. 243.

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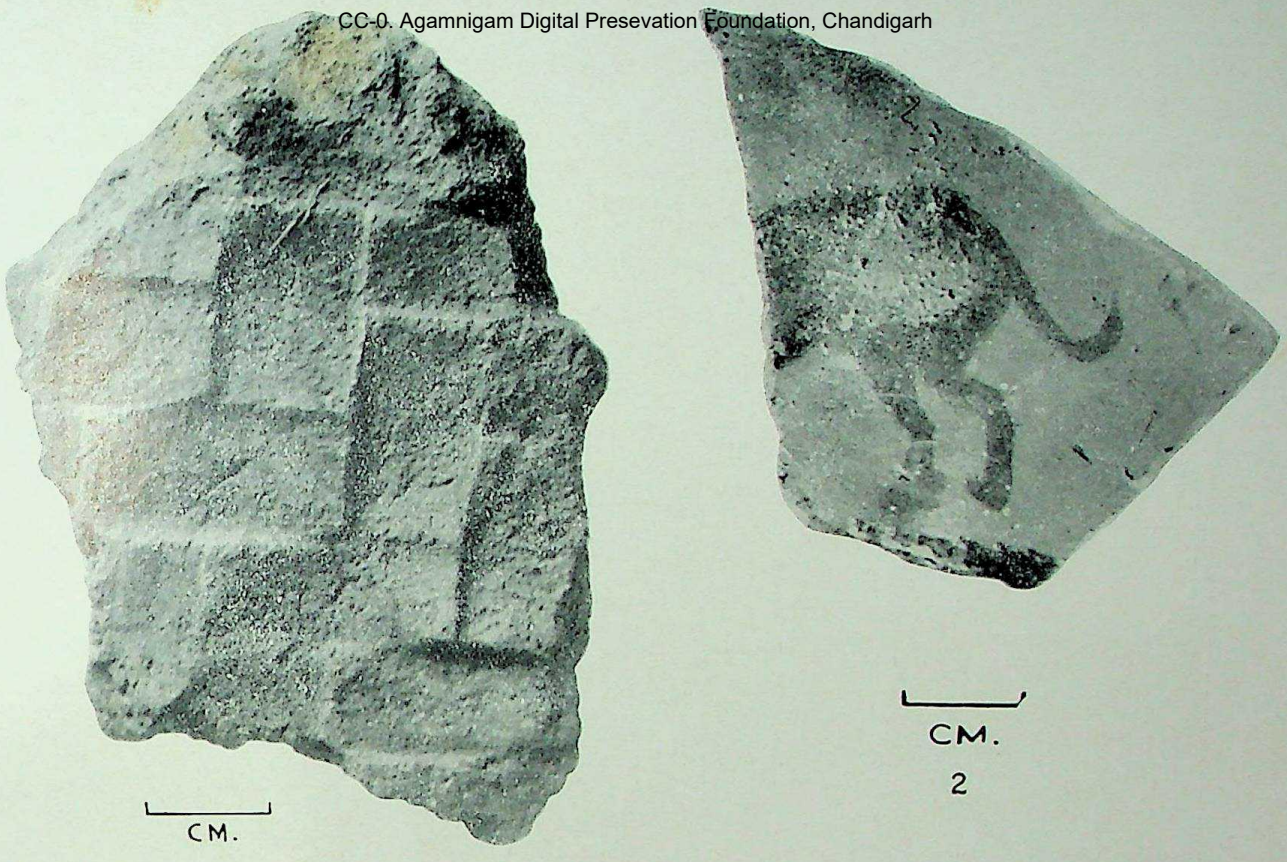

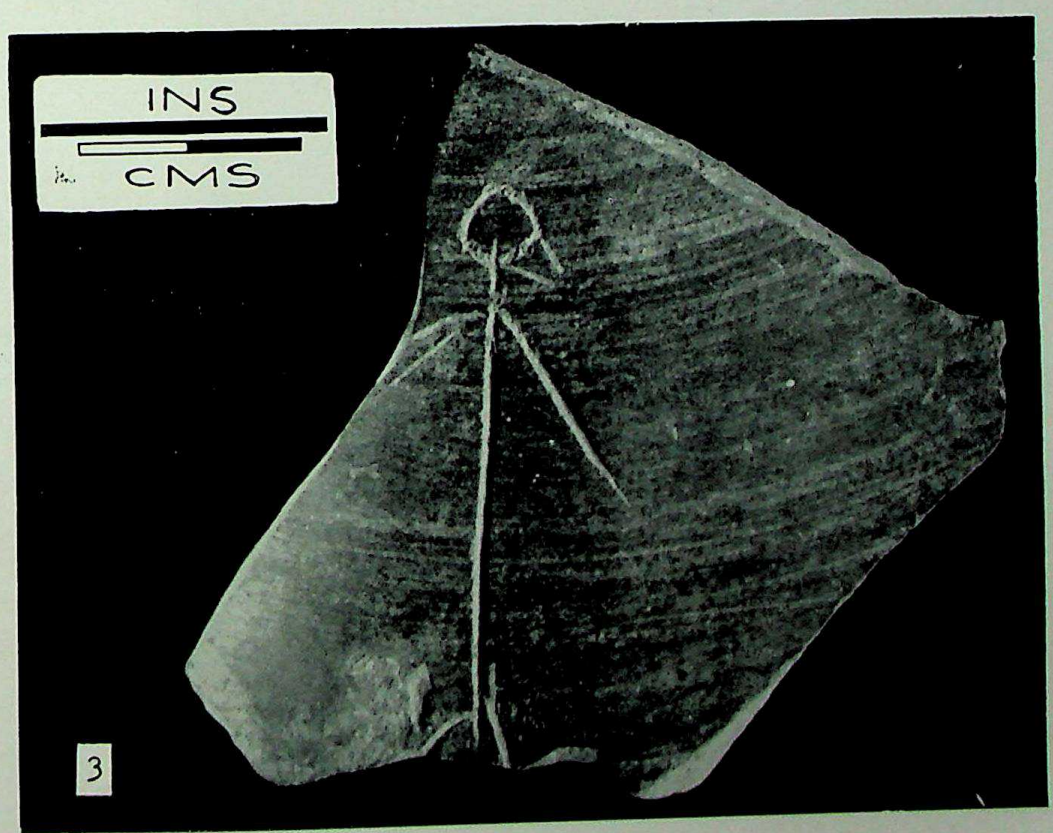

Fig. 105 : *(1) Sherd with reed impressions. (2) Sherd with painting of a dog. (3) Sherd with incised human figure. Period III.* *(See pp. 243, 244, 249).*

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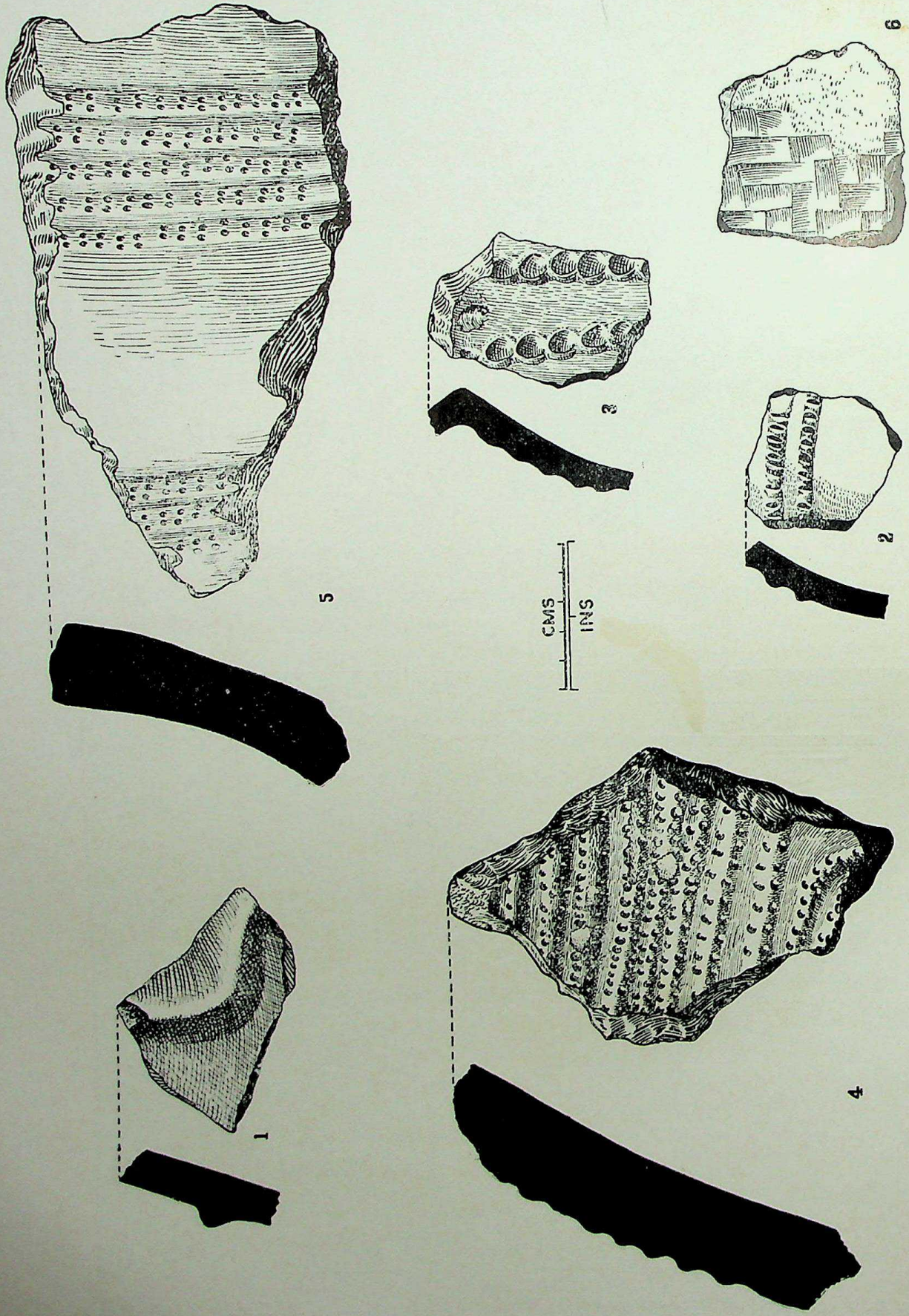

Fig. 106 : Decorated Sherds. [1/2]. Applique (1-5) ; Impressed (6). Period III. (See p. 243).

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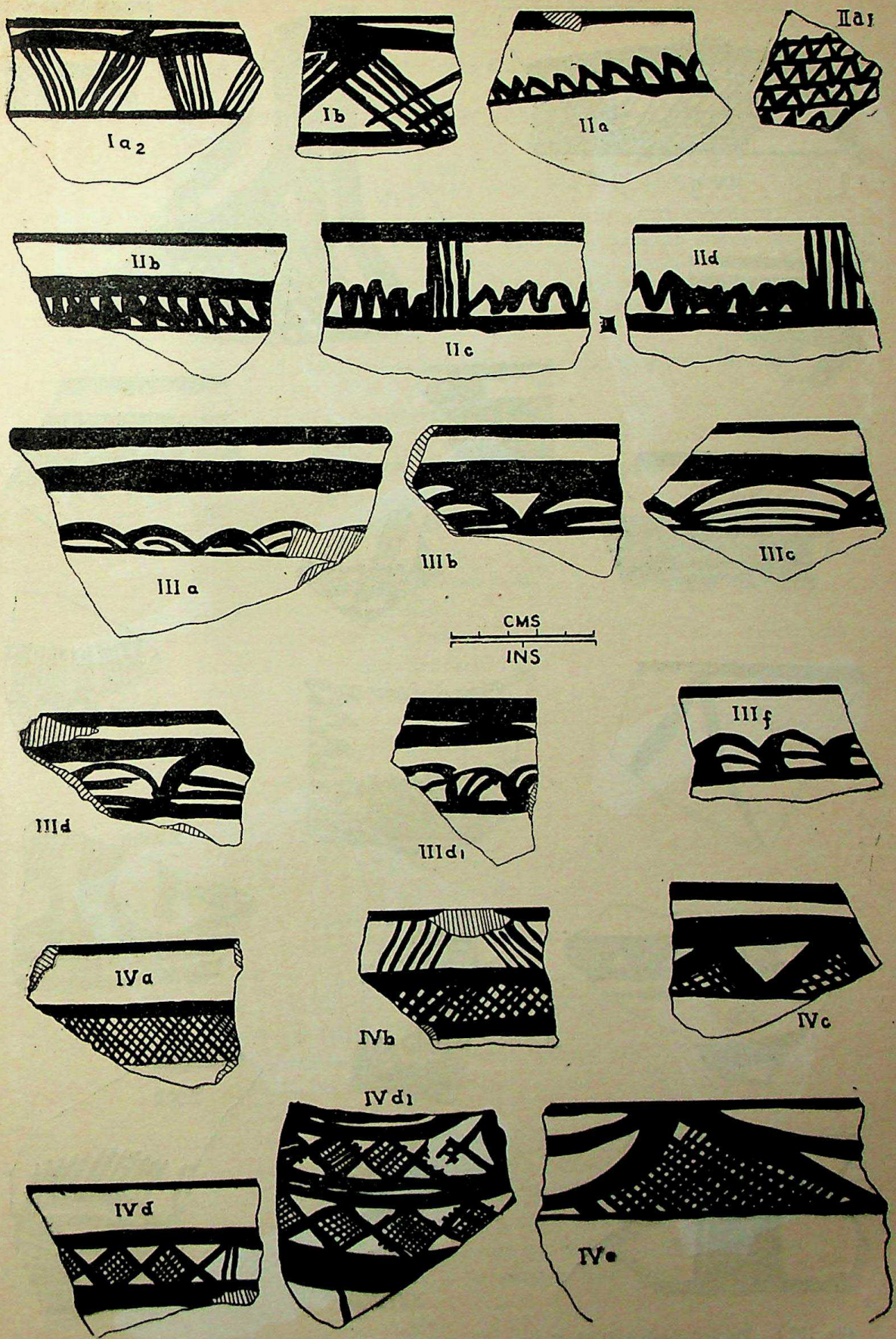

Fig. 107 : Painted Designs [1/2]. Geometrical (Ia2-IVe). Period III. (See p. 249).

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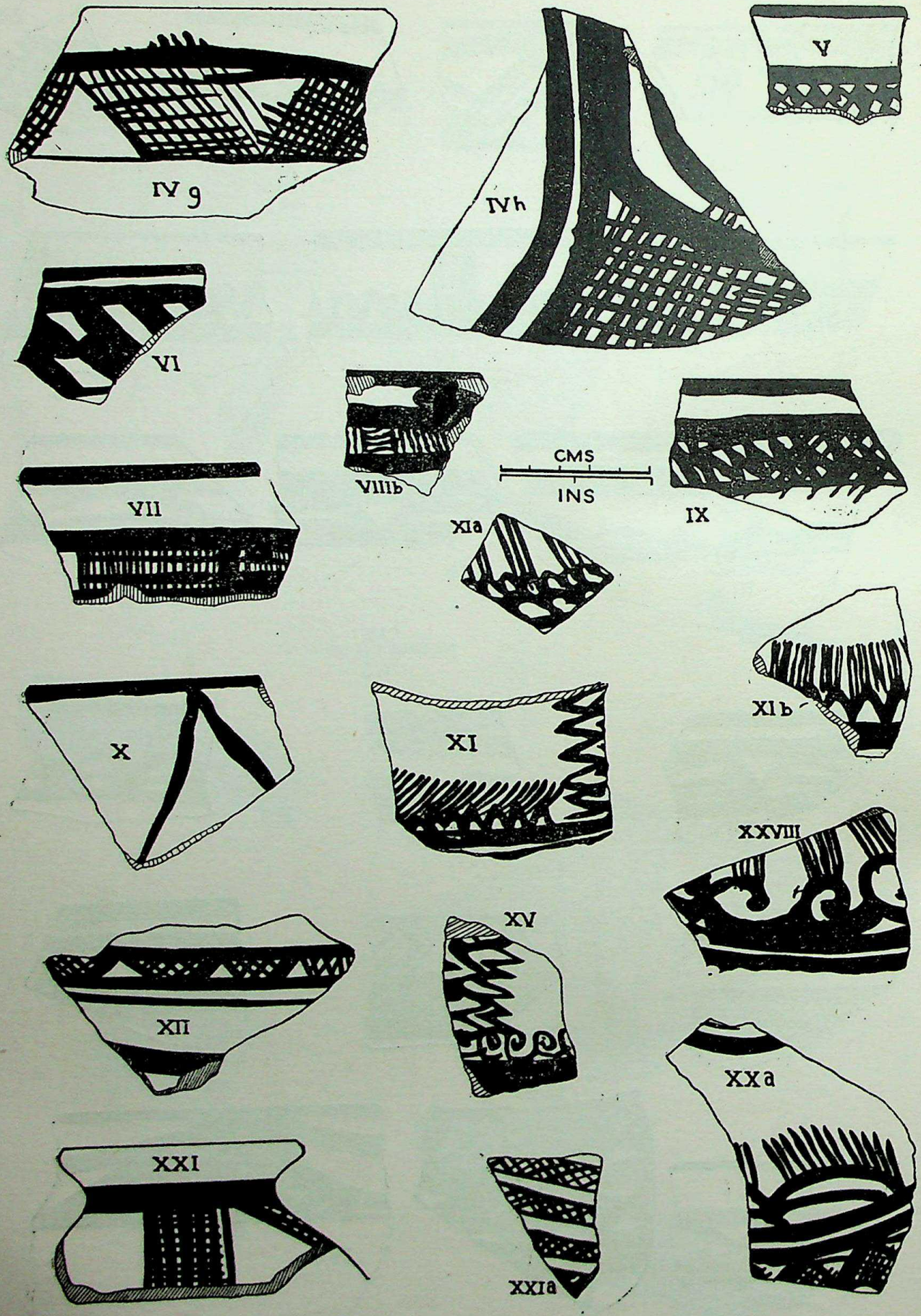

Fig. 108 : Painted Designs [1/2]. Geometrical (IVg-XXIa, XXVIII). Period III. (See pp. 249-250).

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No. 15 Small fragment, red slipped outer surface having hatched design, bands and stylised high-necked and tailed animals. No. 7818, NVS, F, 12.

No. 16 Fragment, outer surface having brown-red wash over which is depicted in black a high-necked, curve body, no tail. No. 7930, NVS, F, 12.

Incised Human Figure: (Fig. 104)

No. 9 Fragment of probably a carinated vessel with the outer surface red slipped and having a linear representation of a human figure; (if the projection near the head is taken as a beak then it can be taken as an anthropomorphic bird figure). No. 5646, NVS, I, 6. [*Fig. 105, No. 3*].

Geometrical Designs: (Figs. 107, 108, 109)

No. Ia1 Groups of lines slanting towards either right or left in separate groups. (See pottery Type 4).

Ia2 As above but in joined groups.

Ib As in *Ia2* but groups of lines intersecting.

IIa Horizontal zigzag lines forming triangles between bands.

IIa1 Zigzags between parallel lines.

IIb As above, but the apex touching the upper band.

IIc Double zigzags between bands

IId Zigzags interspaced by vertical lines.

IIe Combination of *Ia1* and *IId.*

IIIa Simple, low, connected loops.

IIIb As above, but touching the upper band.

IIIc As above but with multiple loops.

IIId As in *IIIb* but with cut loops.

IIId1 As in *IIId* but with bulbous strokes.

IIIe Hatched arches.

IIIf Double loop design.

IIIg Loops run over by slanting lines.

IVa Continuous lattice design between two bands.

IVb As in *IVa* but combined with *Ia1.*

IVc Diagonally latticed triangles.

IVd Row of latticed diamonds.

IVd1 Double row of latticed diamonds.

IVe Latticed triangles formed by suspended loops.

IVf Inverted *IVc* design. (Not illustrated).

IVg Empty triangles flanked by latticed groups.

IVh Loops and hatched diamonds.

V Empty diamonds with dots.

VI Short bands slanting left, relieved by slant lines enclosing solid diamonds.

VII Thin vertical lines between horizontal thick bands.

VIIIa Lines slanting to left between two horizontal bands. (Not illustrated).

VIIIb As above but with the lines intercepted by a group of horizontal lines.

IX Zigzag lines covered over partially by strokes slanting to right.

IXa Small solid zigzags capped by slanting lines. (Not illustrated).

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X Deep loops.
XI Zigzags covered by strokes slanting to the right.
XIa Double loops crowned by vertical lines at intervals.
XIb As *XI* but with strokes drawn vertically.
XIc As *XI* but with groups of vertical strokes capping. (Not illustrated).
XII As *IIIc* but loops closely latticed and capped by bands.
XIII Strokes slanting to left. (Not illustrated).
XIV Lines slanting to right between two bands. (Not illustrated).
XV Vertically embracing zigzags.
XVI Chevrons run over by a broad band in the centre. (Not illustrated).
XVII Diagonaliy latticed chevrons one above the other. (See *T. Ic1*).
XVIII Diagonal lattice design between two bands, the upper band crowned by groups of lines slanting to right at intervals, the lower band having strokes slanting to left. (See *T. Ic*).
XIX Combination of slanting strokes, bands enclosing zigzags and vertical embracing zigzags at intervals. (See *T. Ic2*).
XX Loops crowned by strokes slanting to left. (Not illustrated).
XXa Double loops crowned by slanting strokes to left.
XXI Vertically latticed slant bands.
XXIa Diagonally latticed bands.
XXII Thick vertical bands.
XXIII Irregular vertical lattice design.
XXIV Zigzags on a band flanked by curved lines slanting to left. (cf. *IIc*).
XXV Vertically suspended strokes.
XXVI Groups of slanting strokes of lines between two bands. (Not illustrated).
XXVIa As above but slanting to right. (Not illustrated).
XXVII Thick spirals.
XXVIII Hook design. Capped by vertical strokes.
XXVIIIa Hook designs with some alterations.
XXVIIIb Hook design.
XXVIIIc Hook design.
XXIX Thick wavy band between two bands.
XXX Interlocking wavy design.
XXXI Combination of vertical zigzags, bands and lattice.
XXXII Hatched diamonds between two bands.
XXXIII Plant-like design.
XXXIV Empty squares and rectangles.
XXXV Intercrossing, slant and horizontal lines.

POTTERS' MARKS
(Figs. 110-113)

The Chalcolithic ware at Jorwe had revealed for the first time certain painted symbols like dots and lines, mostly on the outer surface of the

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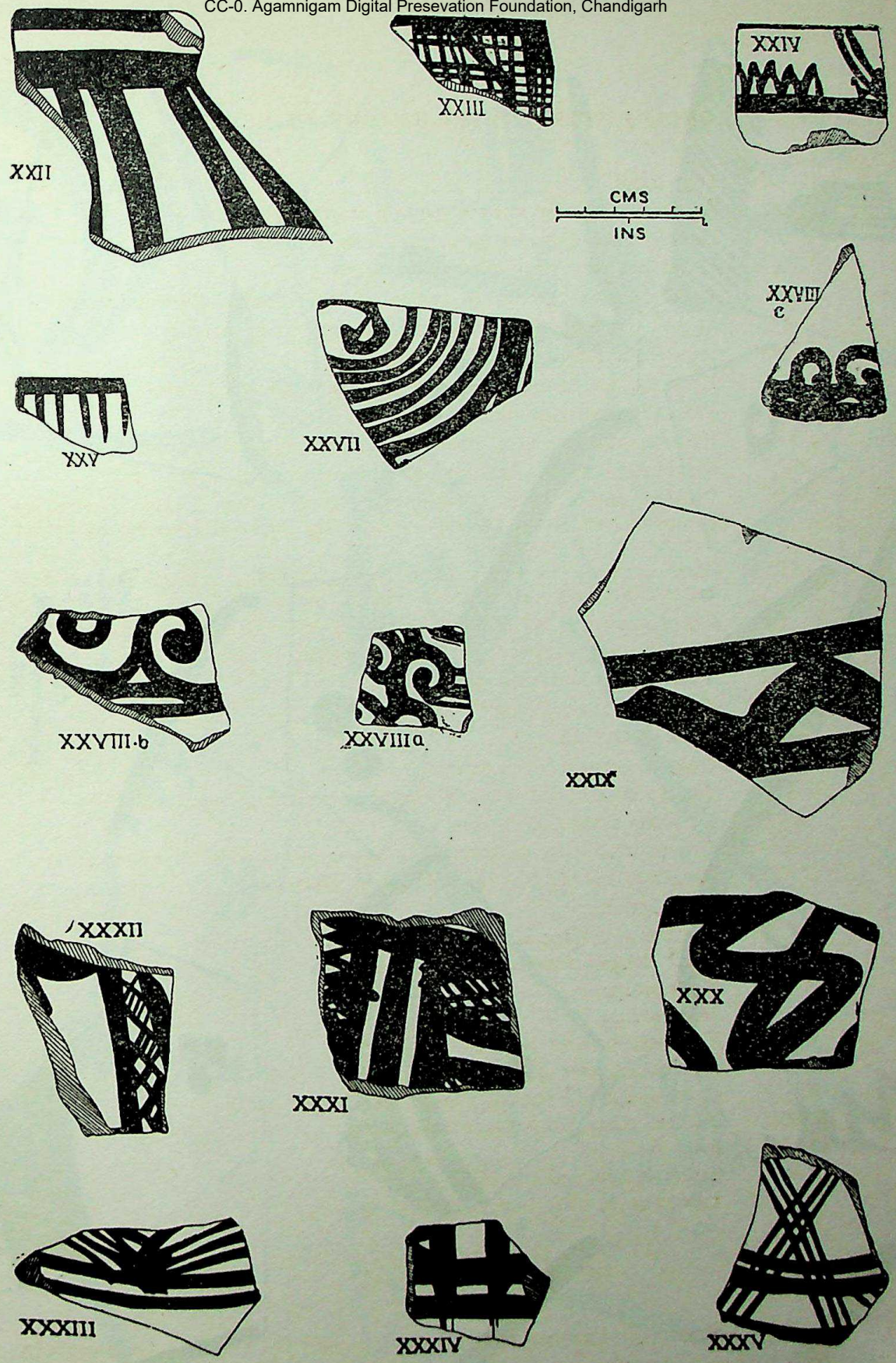

Fig. 109 : Painted Designs [1/2]. Geometrical (XXII-XXXV). Period III. (See p. 250).

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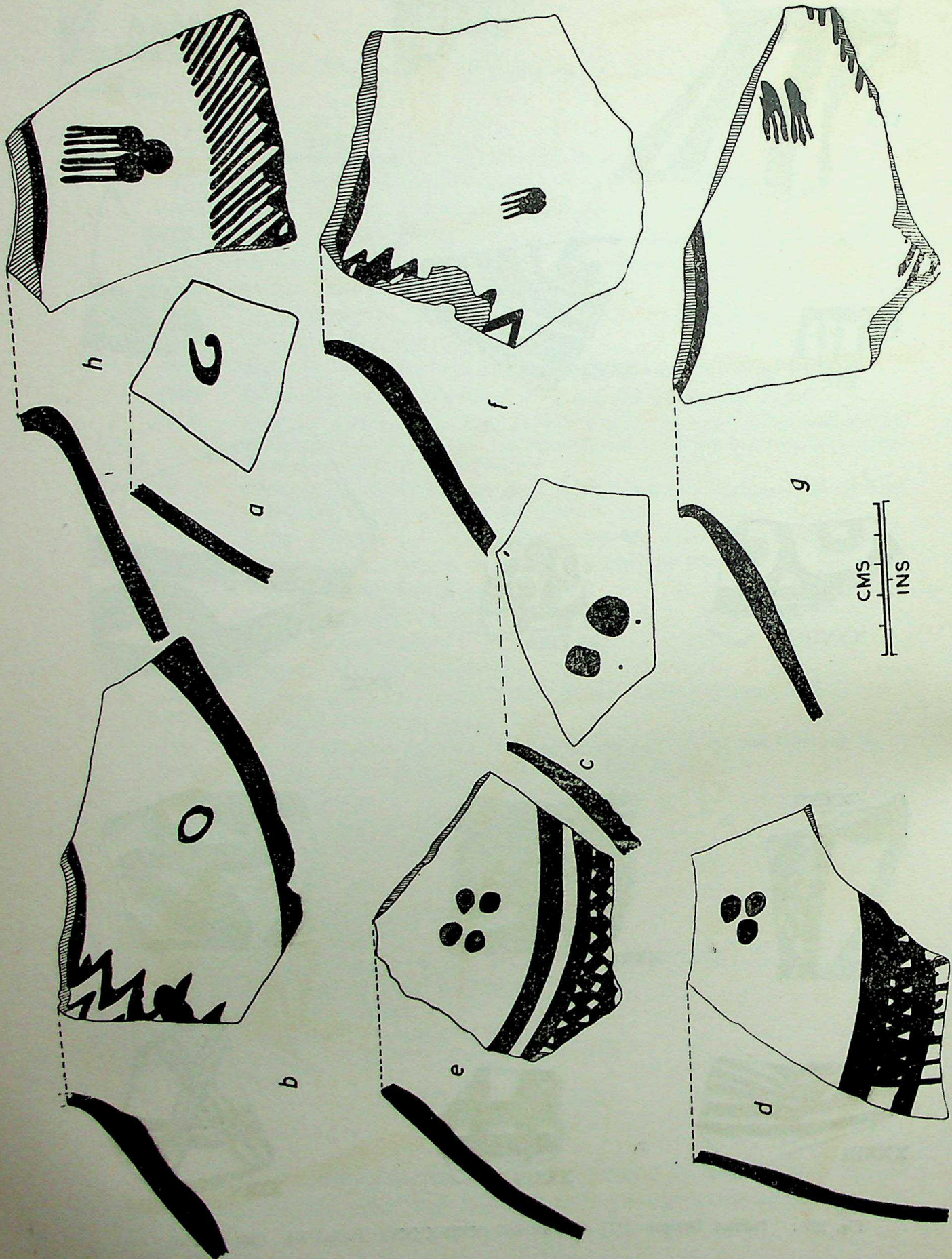

Fig. 110 : Potter's Marks [1/2]. Types a-h. Period III. (See p. 255).

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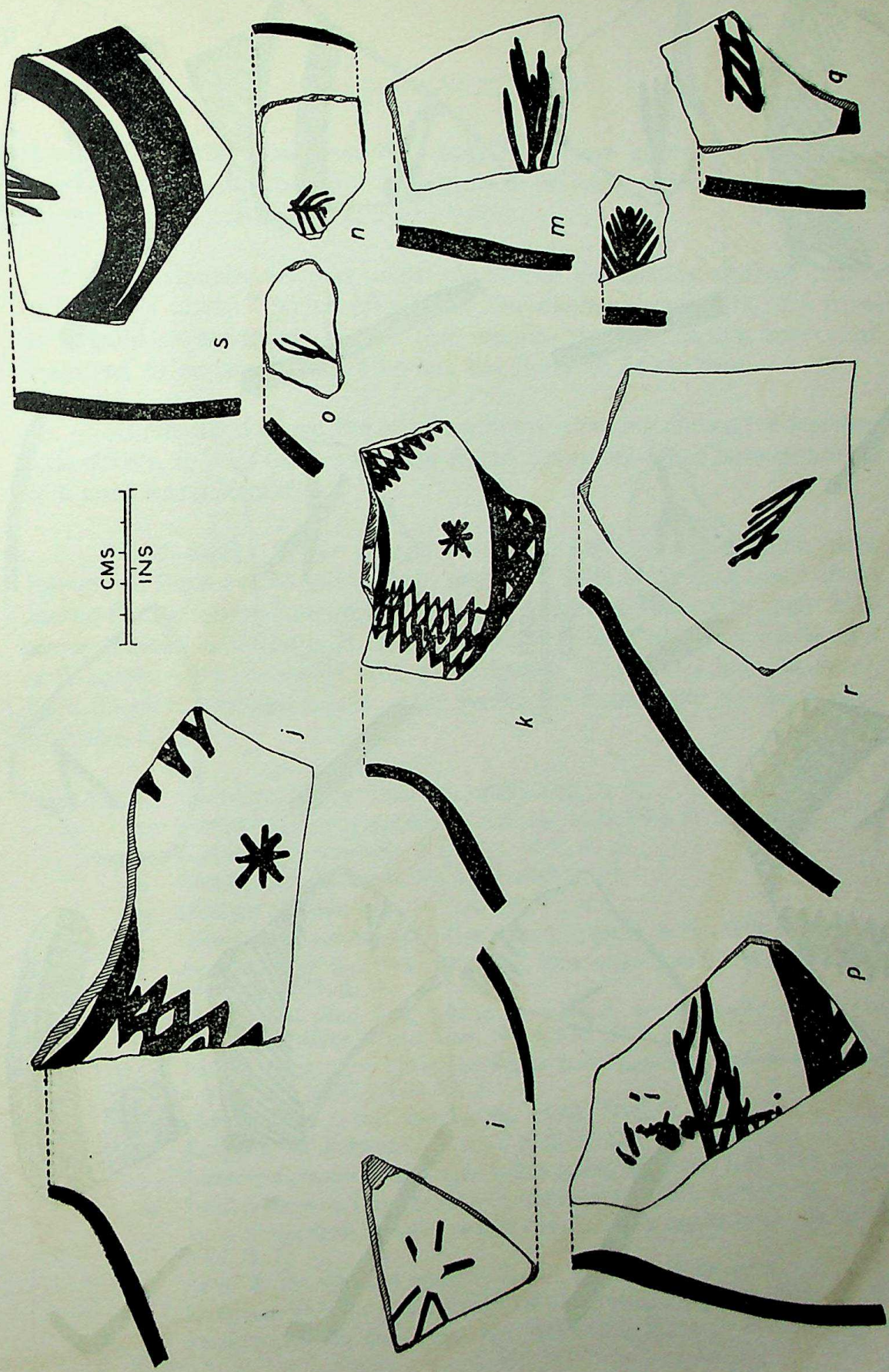

Fig. 111 : Potter's Marks. [1/2]. Types i-s. Period III. (See pp. 255-256).

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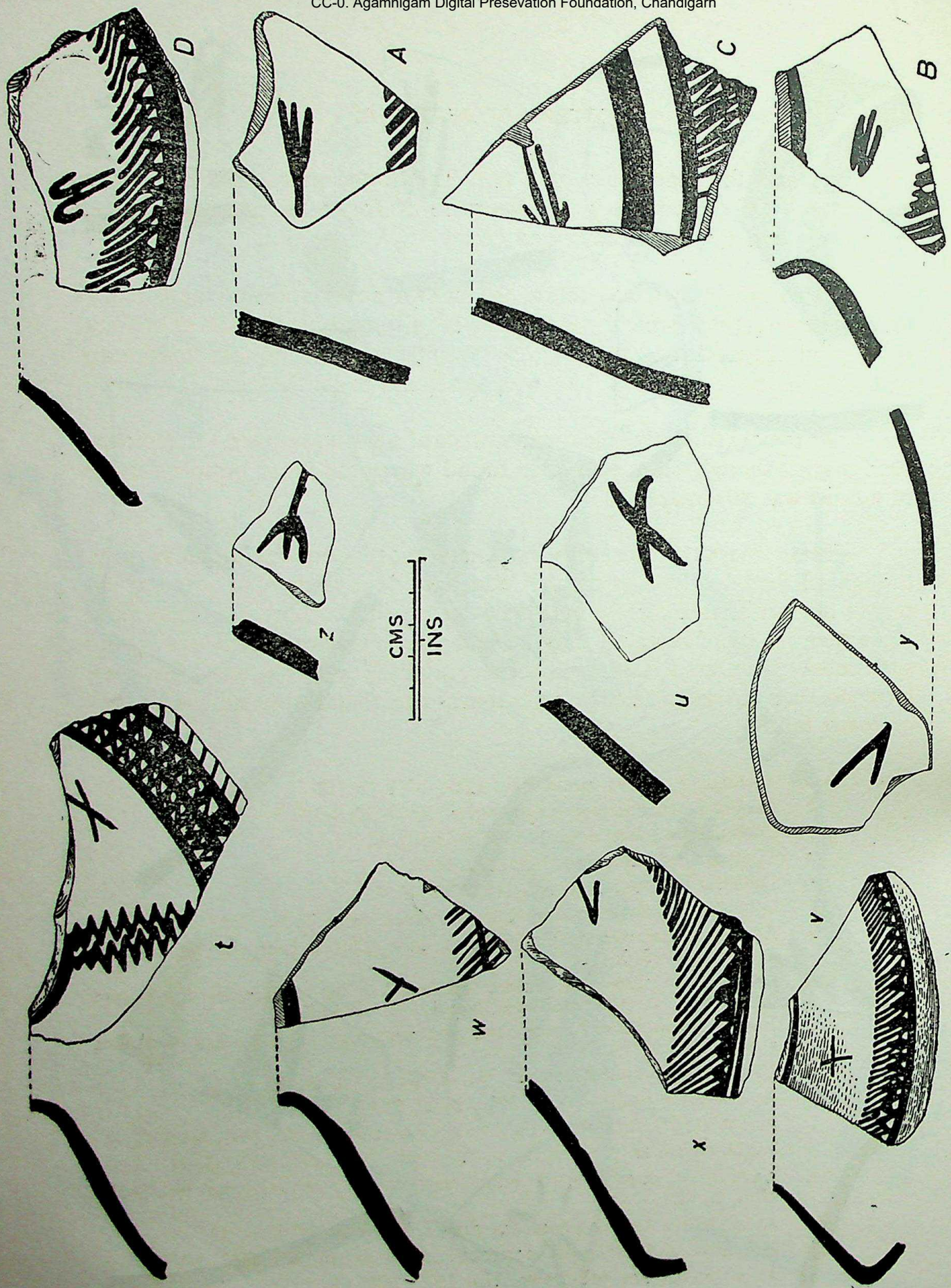

Fig. 112 : Potter's Marks. [1/2]. Types t-D. Period III. (See p. 256).

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shoulders and the inner base of a pot. The Jorwe marks did not exhibit any variety. On the contrary, Nevasa ware of Jorwe fabric reveals a wide variety of such marks, as described below.

Provisionally, we may retain the known designation of these marks as" potter's marks " which may imply the distinguishing mark of a tribal or a guild organisation. It was also verified whether certain marks are restricted to certain shapes. This was not found to be the case.

As remarked above, the outer surface of a pot was chosen for depicting such marks, though cases were also found where the inner bottom-surface of a bowl was also marked.

These marks flower into a variety mostly on the globular pots, though all these evolve out of lines and dots. It is likely that some of the marks like an asterik, arrow and a dot crowned by short lines may have some magical significance. It may be noted here that carinated bowls with such marks were associated with some burials. The burial urns, however, have no such marks. Actually, such marks are found only on the pottery of Jorwe fabric.

Fig. 110, *a* Incomplete, empty circle. No. 8239, NVS, F, 12.
b Globular pot, complete empty circle. No. 8230, NVS, F, 12.
c Globular pot, two dots. No. 8527, NVS, F, 13.
d Globular pot, three dots. No. 8532, NVS, F, 13.
e Globular pot, four dots. No. 111, NVS, Y, 6.
f Globular pot, dot capped by four short lines (palm ?). No. 7549, NVS, C, 11.
g As above, but two dots with three lines capping each dot horizontally. No. 7340, NVS, F, 11.
h Globular pot, three dots, close to one another, the two smaller dots capped by four and three vertical lines. No. 8287*a*, NVS, F, 11.
Fig. 111, *i* Base fragment, inner surface having six centrifugal short strokes resembling a star. No. 10087, NVS, C, 9.
j Globular pot, a neat asterik. No. 8530*a*, NVS, F, 12.
k As above but ill-drawn. No. 9530, NVS, F, 13.
l Arrow-end (?), chevrons to right with a central band. No. 7197, NVS, G, 11.
m Possibly same as '*l*' but broad and ill-drawn. No. 7193, NVS, G, 11.
n As in '*l*' but three inverted vertical chevrons on a central band. No. 8418, NVS, G, 12.
o As in '*m*' but thin and vertically drawn. No. 8527, NVS, F, 13.
p Elongated globular vessel, horizontal ladder design. No. 6837, NVS, F, 9.
q As in '*p*' but not well-drawn. No. 7307, NVS, F, 11.

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Fig. 111, *r* Globular vessel, possibly ladder design but with only one arm. No. 7752, NVS, D, 11.

s Possibly similar to '*q*'. No. 6773, NVS, F, 9.

Fig. 112, *t* Globular vessel, a horizontal cross. No. 4938, NVS, B, 9.

u As above, but thick. No. 3092, NVS, F, 12.

v Carinated vessel, vertical cross. No. 130, NVS, Y, 6.

w Globular vessel, a '*y-like*' cross. No. 393, NVS, I, 6.

x Carinated vessel, two lines meeting at an acute angle to left. No. 7372, NVS, G, 12.

y As above, but angle to right. No. 7817, NVS, F, 12.

z A horizontally drawn '*triśūla-like*' mark to left. No. 6138, NVS, I, 6.

A Somewhat like 'z' but to right. No. 6138*a*, NVS, I, 6.

B Globular vessel with "flying bird" or horizontal '*w*'-*like* mark. No. 6873, NVS, G, 11.

C Horizontally laid hooks back to back. No. 4830, NVS, I, 6.

D As in '*C*' but vertical and without angular turn, carinated vessel. No. 7194, NVS, I, 6.

Fig. 113, *E* Globular vessel, vertical embracing zigzags capped by lines slanting to right. No. 110, NVS, Y, 5.

F Horizontal, embracing zigzags. No. 110*a*, NVS, Y, 5.

G Globular vessel, as above but short. No. 7804, NVS, D, 11.

H Carinated vessel, horizontal wavy line capped by a slanting straight line. No. 6741, NVS, C, 10.

I Globular vessel, possibly mark as in '*m*'. No. 386, NVS, I, 6.

J Carinated vessel, horizontal hook-mark with a short head. No. 372, NVS, I, 6.

K Carinated pot, inverted nail mark. No. 7486, NVS, F, 12.

L Globular pot, a pair of English '*B-like*' symbols back to back. No. 6503, NVS, I, 6.

M Flower (?) mark with four petals. No. 8078, NVS, H, 12.

POTTERY OF PERIOD IV

The bulk of the pottery of the early historic or Period IV was much less as compared to that of both the preceding and the succeeding periods. However, it is markedly different in shapes, fabric and make from that of Period III.

The characteristic ceramic feature of this period is the emergence of the NBP, the black-and-red ware, the criss-cross painted Andhra ware, a wide range of shapes in the coarse and slipped red pottery, tan-slipped ware and a kind of red-and-black ware which, as will be seen below, differs considerably from the black-and-red ware.

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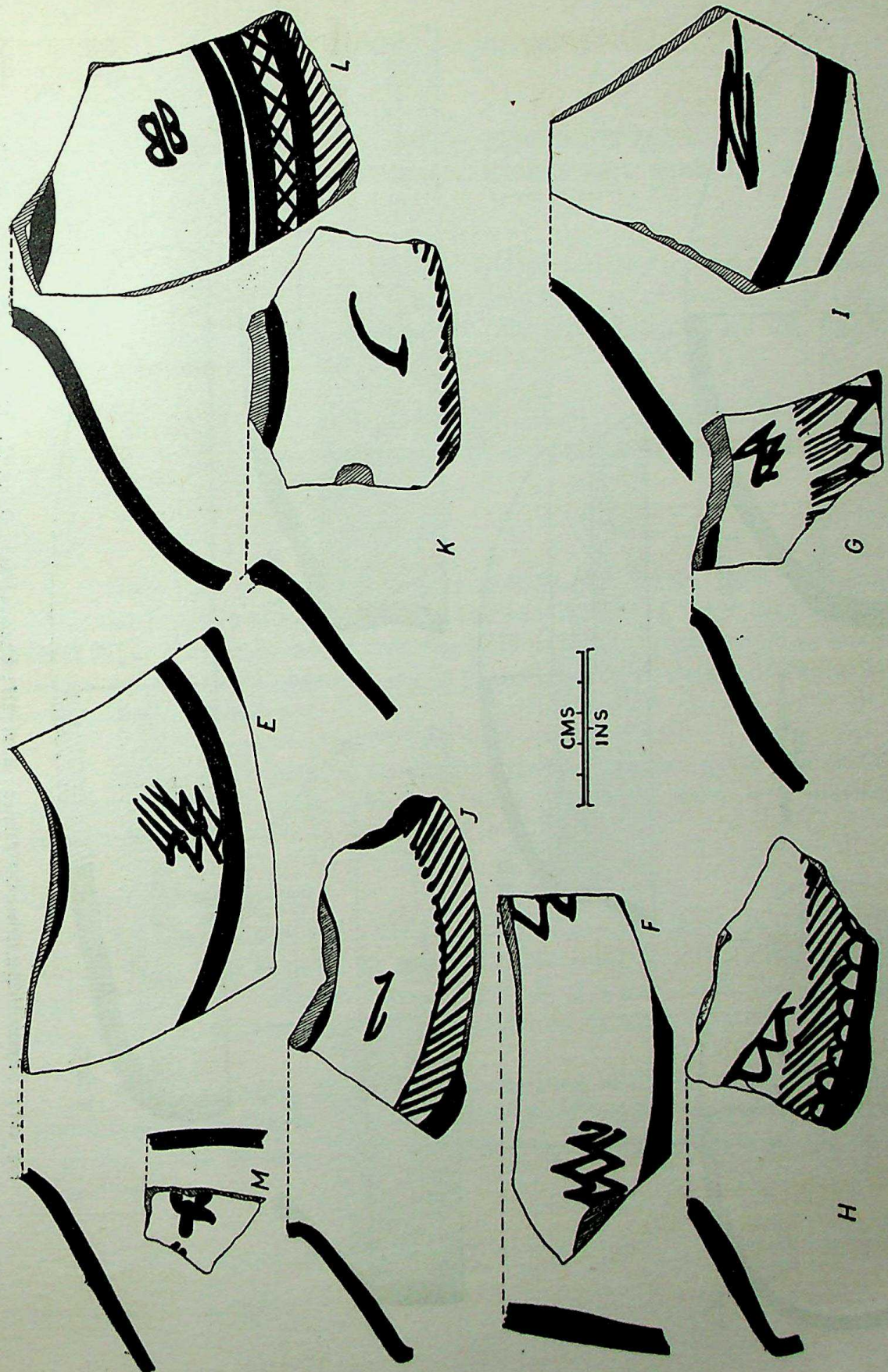

Fig. 113 : Potter's Marks. [1/2]. Types E-M. Period III. (See p. 256).

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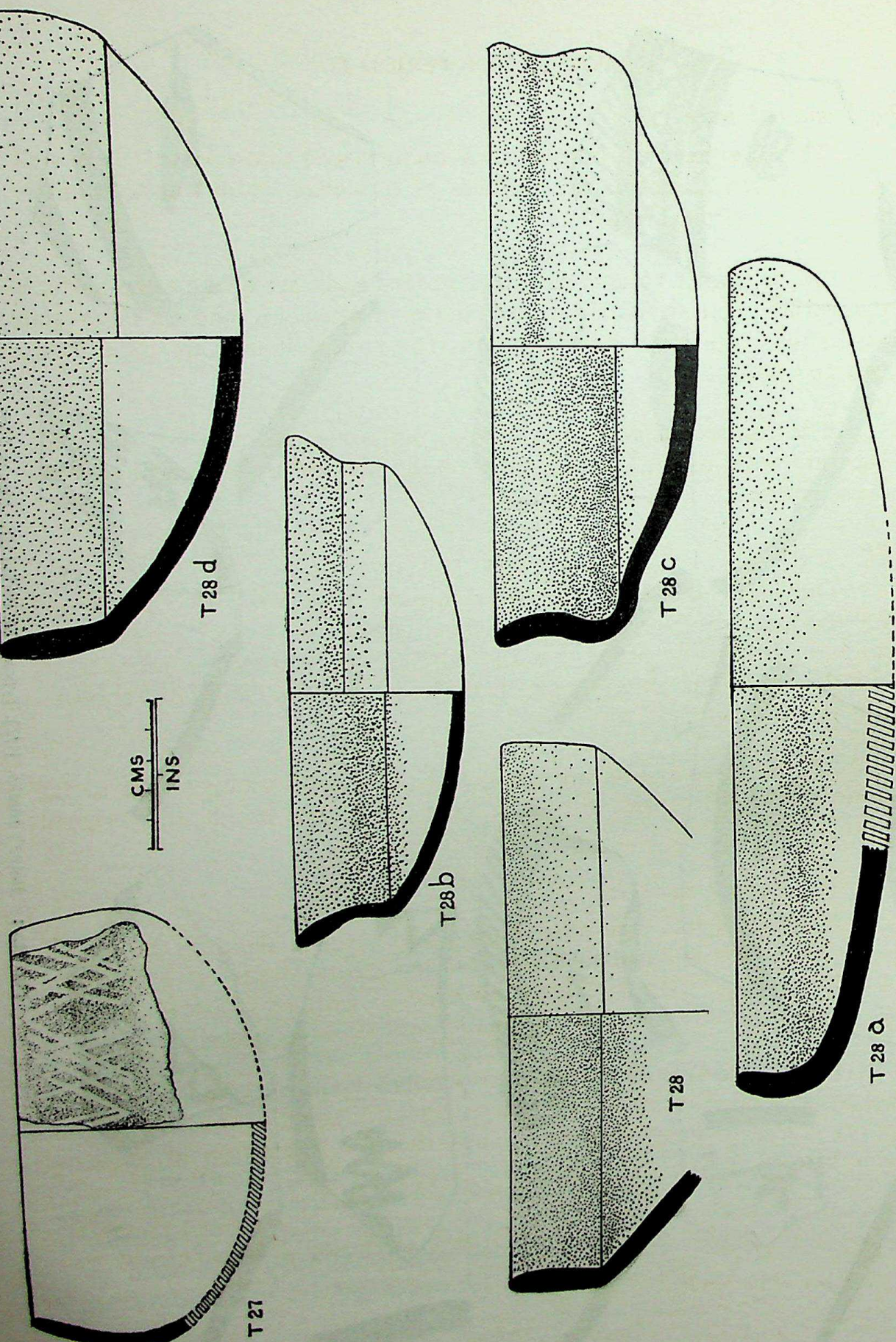

Fig. 114 : Types 27-28d, Criss-cross Painted ; Bowl (27) ; Black-and-Red : Dishes (28-28d), Period IV. (See pp. 260, 263).

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POTTERY OF PERIOD IV

Black-and-red ware

This is either well burnished or unburnished and coarse.[15] It is well known that the black-and-red surfaces of this ware result due to what is known as ' inverted firing '.

In the former variety, the inner surface and part of the outer surface are invariably burnished. The clay shows mixture of sand particles and grass as also sometimes lime particles. The typical shapes are the rimless bowls and dishes.

The coarse black-and-red, though unburnished, does not represent a separate ware as such since most of the shapes are common to both these varieties.

NBP

Only four sherds of this were found—Nos. 3863, 1939, 3748 and 1425; the first two from layer 3, the third from layer 4, Tr.Y, and the last from X, 4. It is to be noted that the NBP is totally absent in upper layers where the amphorae predominate. It thus confirms the dating of Period IV which is pre-Amphora.

All the three sherds are small fragments and belong to the so far standardised NBP fabric with grey core, steel-blue polish and original reddish surface.

Criss-cross painted ware

The find of this ware was restricted to a single sherd in the second season. This ware is dated to about 1st-2nd century A.D. at Brahmagiri and Chandravalli.[1] Besides these, this kind of pottery is known to have been found in Madras, Andhra, Karnatak and Bombay States.[16]

The association of the painted Andhra ware with the NBP and pre-Amphora horizon at Nevasa may urge—if similar evidence in larger quantity comes to hand from new sites—the reconsideration of the date of this ware.

15. For distribution, date and varieties of this ware, see SANKALIA, SUBBARAO, and DEO, *op. cit.*, p. 134.
16. *A.I.*, No. 4, pp. 308-10.

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Tan-slipped ware

This is represented by a few sherds. Though the shapes tally with those of the contemporary black-and-red pottery, this ware stands out due to its highly burnished tan slip and its uniform dark brown core. Somehow, it does not seem to have found favour with the users at any period at Nevasa.

Red-and-black ware

This ware, like the preceding one, is evidenced by very few pieces. It is different in technique if compared to the black-and-red ware. Here the outer bases are black, rim red, and interior also red. Moreover, the slip though highly burnished in a few cases, shows fissured surface. The core is gritty like that of the black-and-red but shapes seem to differ. A detailed comparison is not possible due to the meagre quantity of the material available.

Red ware

Three varieties are available in this ware which is the most abundant when compared to the quantity of other wares. First is the coarse red with dull brown surfaces; second, the red ware with thin dark red wash, and the third is the slipped red ware. The last shows better shapes, while the first two reveal strictly utilitarian shapes of common everyday use. However, it may be noted that storage jars with thick sides, which are found with coarse red surfaces, are mostly red-slipped at Nevasa. Another notable feature of the red ware is that it seems to have been the most selected for decoration.

THE CRISS-CROSS PAINTED ANDHRA WARE

(Fig. 114)

Bowl

T.27 Fragment, rimless bowl, slightly bulbous at the base, sides of uniform thickness, exterior dull brown with criss-cross painting in pale yellow, interior black slipped, core gritty. No. 4276, NVS, Y, 4. (Cf. *Anc. Ind.* No. 4, p. 279, Fig. 45, Type A3 from Chandravalli).

BLACK-AND-RED WARE (Burnished)

(Figs. 114-116)

Dishes (Figs 114—115)

T.28 Nearly half of a dish with coarse and porous surfaces, plano-convex walls, saggering base, clay full of silica. No. 692, NVS, F, 9.

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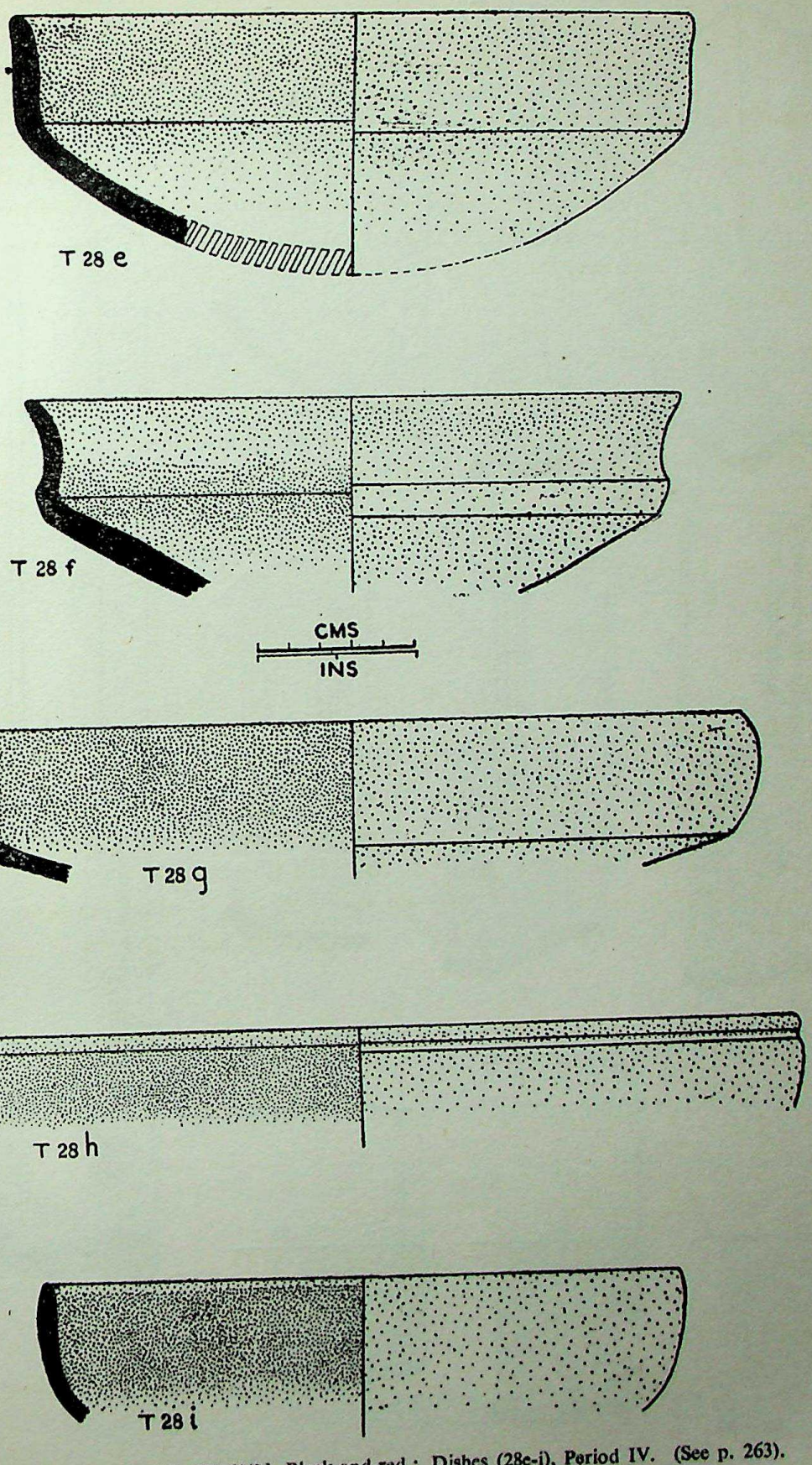

Fig. 115 : Types 28e-28i [1/2]. Black-and-red : Dishes (28e-i), Period IV. (See p. 263).

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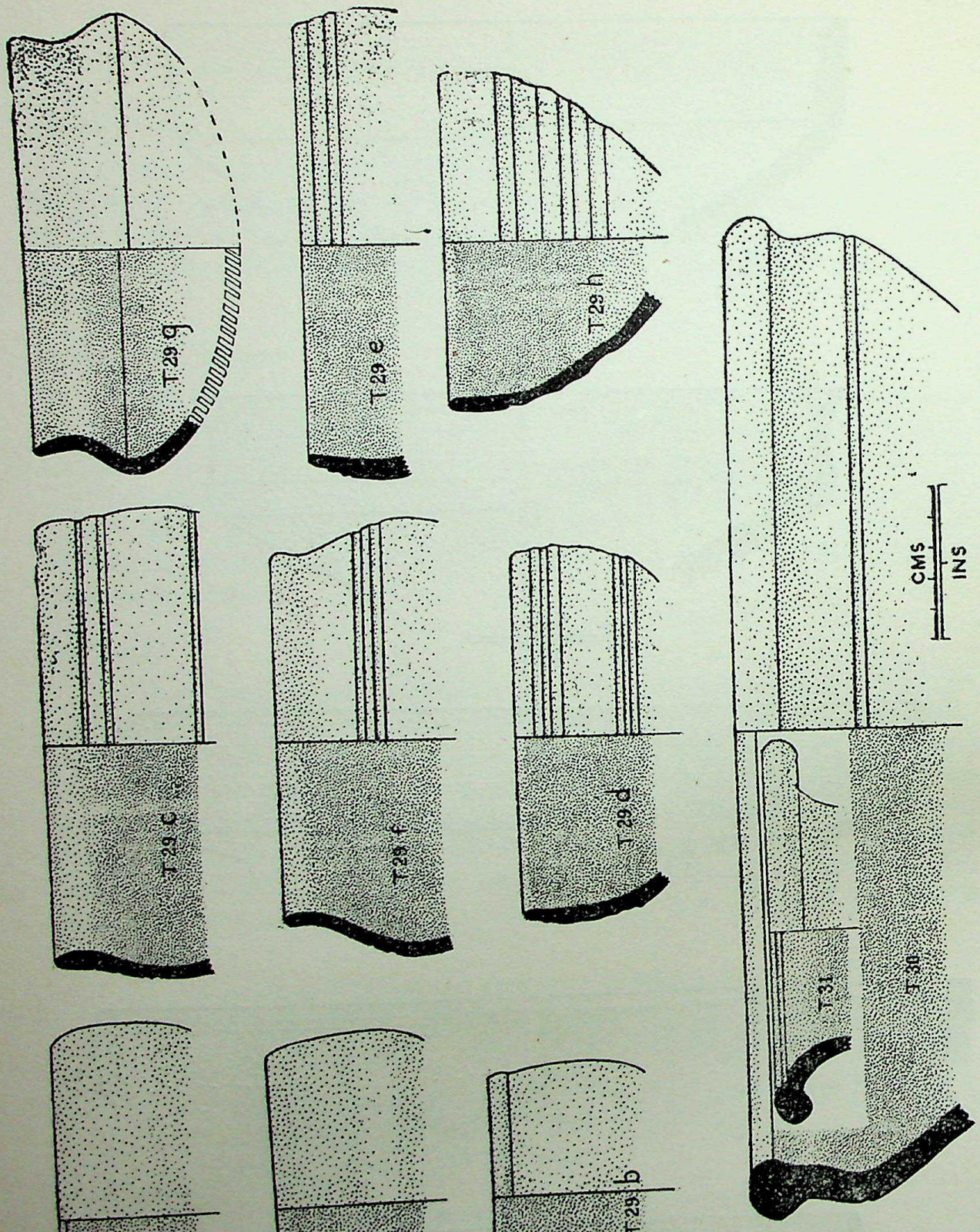

Fig. 116 : Types 29-31 [1/2]. Black-and-red ; Rimless bowls (29-29h) ; Basin (30) ; Short-necked vessel (31). Period IV. (See p. 263).

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T.28a As above but shallow and thick, with rounded edge, rounded at the turn, inner surface shows remains of lime. No. 668, NVS, H, 8.

T.28b Nearly half of a medium-size dish, surfaces well burnished, pointed edge, sides going out. No. 6555, NVS, H, 8.

T.28c As above but thick and coarse, surfaces porous, protruding and convex at the turn. No. 692, NVS, A, 9.

T.28d As *T.28* above but slightly depressed below the turn, rounded edge. No. 8504, NVS, I, 4.

T.28e Fragment, interior black-burnished, rounded edge, slightly depressed in the middle on the exterior. No. 420, NVS, I, 3.

T.28f Fragment, deep dish, thicker towards base, concave sides, banded at the turn, saggering base. No. 626, NVS, F, 8.

T.28g Fragment, dish with convex sides, in-going rounded edge, thinner towards base. No. 199, NVS, Y, 3.

T.28h Fragment of a very wide dish, thick sides, bevelled in top, groove on the exterior, unburnished, porous surface. No. 68, NVS, Y, 3.

T.28i Fragment, comparatively thinner sides, rounded edge, well-burnished surfaces. No. 202, NVS, I, 3.

Rimless Bowls (Fig. 116)

T.29 Fragment of a rimless bowl with sides getting thinner towards the base, edge rounded and thicker, surfaces black burnished. No. 71, NVS, Y, 3.

T.29a Fragment, as above but sides somewhat straight. No. 653, NVS, G, 8.

T.29b Fragment, small-size bowl, bulging at the base, burnished only near the edge. No. 221, NVS, I, 3.

T.29c Fragment, deep bowl, rounded thick edge, two grooves on the exterior, surfaces partly burnished. No. 689, NVS, F, 9.

T.29d Fragment, somewhat hemispherical in shape, grooved on the exterior near the edge and base, uniform thickness, burnished internally only. No. 219, NVS, I, 3.

T.29e Small fragment, as *T.29d* but with thicker and bulbous sides, edge rounded, grooved externally. No. 251, NVS, I, 3.

T.29f Fragment of a bowl with bulge near the base, edge rounded and out-turned, grooved on the exterior. No. 655, NVS, H, 8.

T.29g Fragment, rounded edge, concave sides, prominent bulge at the turn, saggering base. No. 317, NVS, I, 3.

T.29h Fragment of deep bowl with slightly flaring and grooved sides, rounded edge, thick at the base. No. 627, NVS, F, 8.

Basin (Fig. 116)

T.30 Fragment of a wide basin with clubbed rim and thick sides. No. 667, NVS, H, 8.

Short-necked Vessel (Fig. 116)

T.31 Rim and neck fragment of a vessel with short neck, out-beaded rim, black-slipped and burnished internally, exterior Indian red. No. 681, NVS, F, 9.

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Coarse Black-and-Red Ware

(Fig. 117)

Bowl

T.32 A complete, deep bowl with flat base, parabolic outline, interior coarse black, exterior base coarse red. No. 3688, NVS, A, 8.

Bowl or Lid

T.33 An almost complete bowl or lid with slightly discoid but flat base, convex sides, rounded edge, coarse black inside. No. 268, NVS, I, 3.

Carinated bowl

T.34 Fragment of a bowl with concave sides, out-going edge, carination at the base, interior coarse grey, exterior blotchy. No. 5757, NVS, D, 8.

Bowl with flaring sides

T.35 Fragment of probably a bowl or vessel with flaring sides, surfaces coarse black, grooved exterior, rounded edge. No. 664, NVS, H, 8.

Globular Vessel

T.36 Half of a pot with thick base, out-turned rim, globular outline, interior dull brown and grooved. No. 6560, NVS, H, 8.

Squat, biconvex pot

T.37 Almost complete specimen of a pot with flat base, convex sides, rim broken, interior dull black, groove at the belly. No. 708, NVS, H, 9.

Tan-slipped Ware

(Fig. 117)

Rimless Bowl

T.38 Half of a rimless bowl with tan-slipped burnished surfaces, parabolic outline, flat base, sides tapering towards the edge, core porous and dark brown. No. 7009, NVS, G, 10.

Dish

T.39 Fragment of a dish, convex near the base, sides of uniform thickness, rounded edge, surfaces porous. No. 755, NVS, G, 10.

Dark Chocolate-slipped Ware

(Fig. 117)

Bowl

T.40 Half of a rimless bowl sub-oblate in outline, surfaces chocolate slipped, rounded edge, core compact black, outer surface burnished. No. 4665, NVS, X, 4.

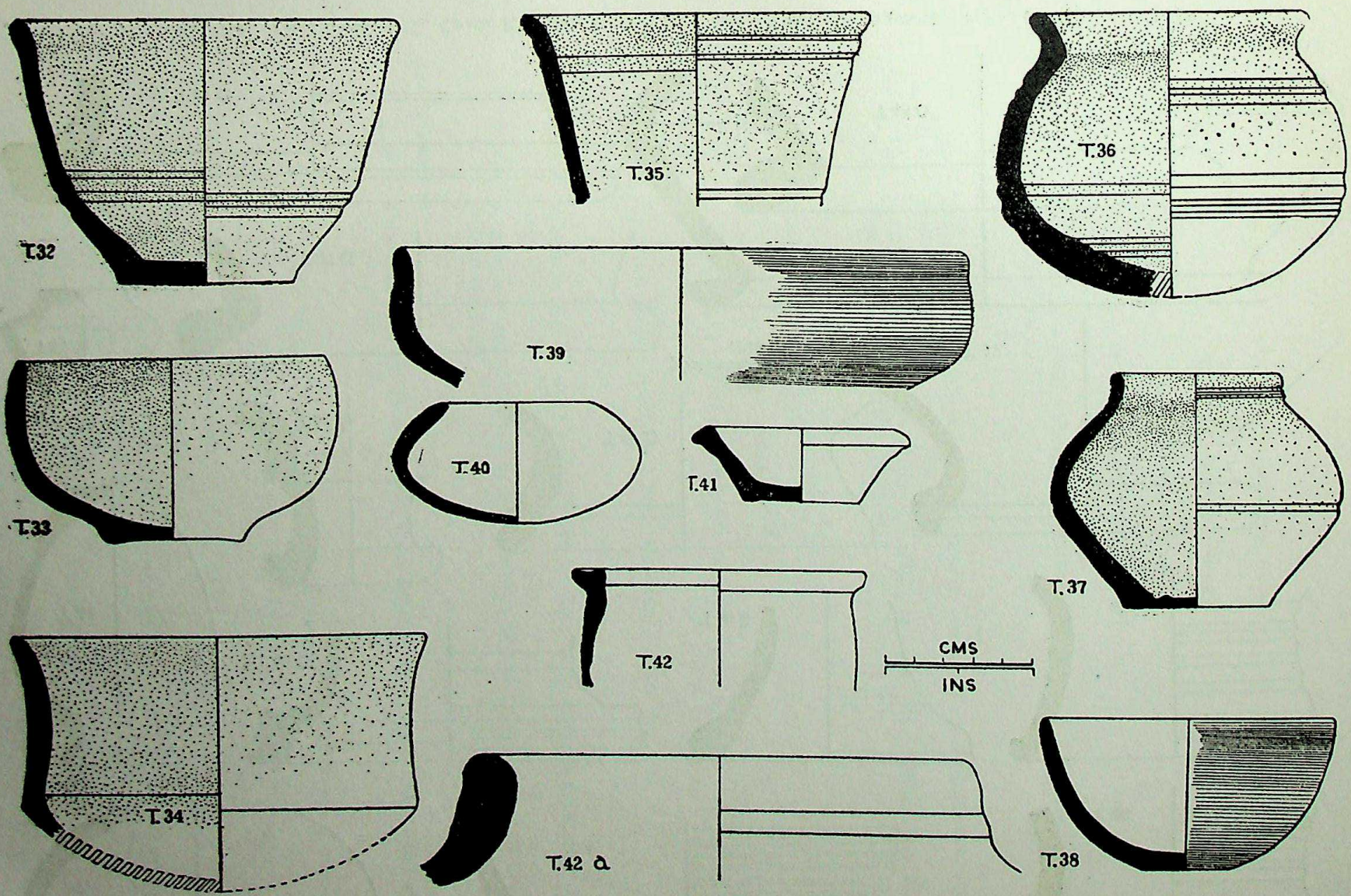

Fig. 117 : Types 32-42a [1/2]. Coarse Black-and-red (32-37) ; Tan Ware (38-39); Chocolate Ware (40) Coarse Black Ware (41-42a). Period IV. (See pp. 264-66).

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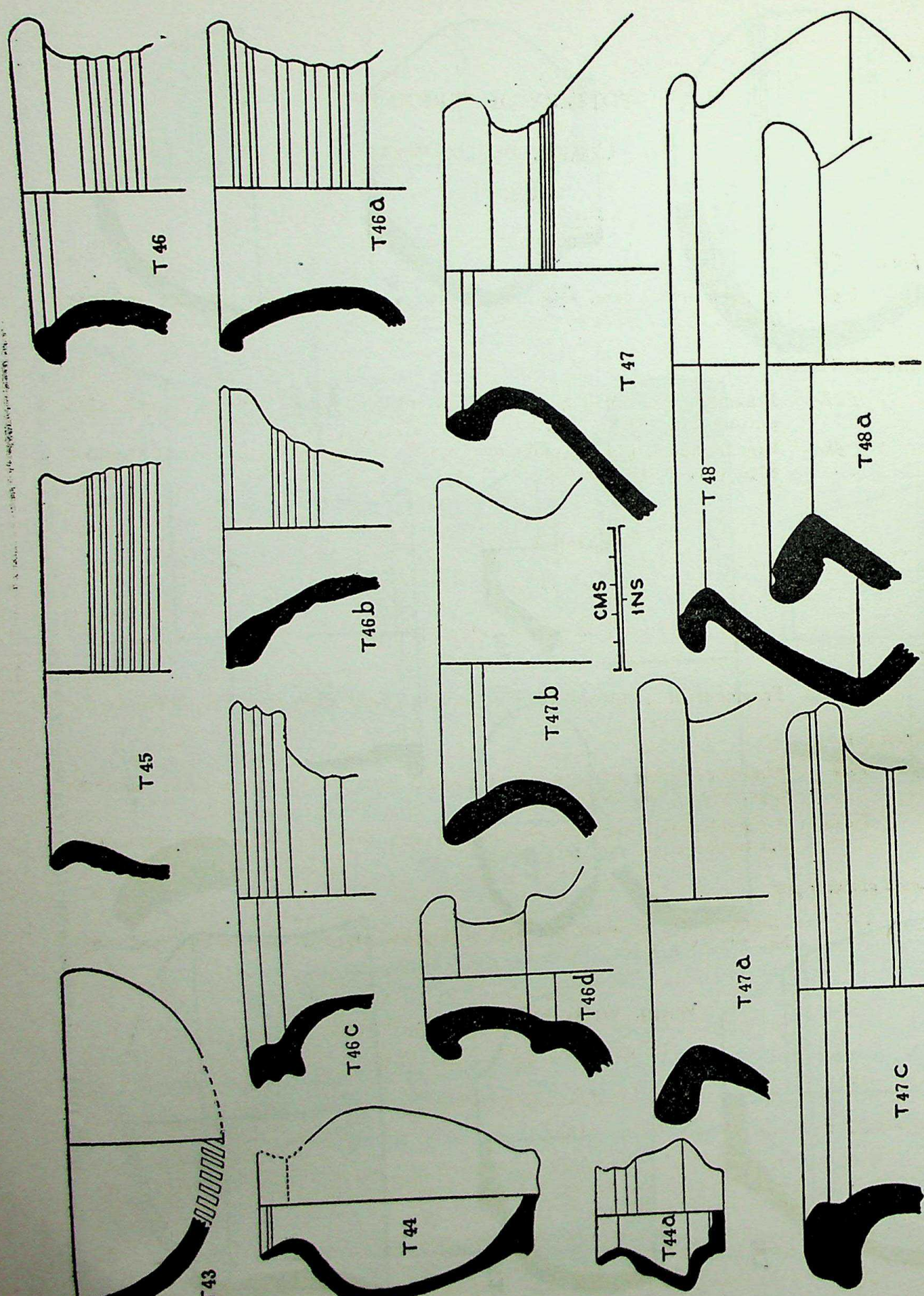

Fig. 118: Types 43-48a [1/2]. Coarse Red Ware (43-45); Ware with red slip or wash (46-48a). Period IV. (See pp. 267-268).

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POTTERY OF PERIOD IV

COARSE BLACK WARE

(Fig. 117)

[*T.33* occurs in this ware also]

Panti or Lid

T.41 A small intact *panti* with concave flaring sides, bevelled out edge, flat base. No. 41, NVS, Y, 3.

Globular Vessels

T.42 Fragment of a small globular vessel with out-turned rim, short neck, core porous and black. No. 174, NVS, I, 3.

T.42a Rim fragment of a big globular pot with converging thick rim with rounded edge, core gritty. No. 666, NVS, H, 8.

COARSE RED WARE

(Fig. 118)

[*T.32* occurs in this ware.]

Bow

T.43 Fragment of a sub-spherical bowl with sharp edge. No. 596, NVS, G, 7.

Small pots

T.44 Almost complete ovoid pot with discoid base, short concave neck, rounded edge. No. 6558, NVS, G, 8.

T.44a A complete pot with concave stepped-sides, discoid base, concave neck and out-turned edge. No. 603, NVS, G, 8.

Small globular pot

T.45 Fragment of a globular pot with corrugated exterior, short out-turned rim No. 59, NVS, Y, 3.

WARE WITH RED SLIP OR WASH

(Figs. 118, 119, 120, 121)

[*T.33* occurs in this ware]

High-necked globular Vessels (Fig. 118)

T.46 Fragment, high neck, fully red slipped and burnished on the outside and partially inside, out-turned beaded-out rim, shallow grooved exterior, core gritty. No. 233, NVS, I, 3.

T.46a Fragment, as above, but thinner, more grooved and higher. No. 658, NVS, H, 8.

T.46b Fragment, as above, but thick beaded edge, tapering down neck, grooved and red-slipped exterior. No. 239, NVS, I, 3.

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T.46c Fragment of a grooved rim and concave high neck, red slipped outside only. No. 49, NVS, Y, 3.

T.46d Fragment of a high narrow neck, ridged exterior, beaded edge with flat top, exterior with a red wash. No. 36, NVS, Y, 3.

Vessels with short neck (Fig. 118)

T.47 Fragment of a globular vessel with short neck, and banded rim, exterior chocolate slipped, interior coarse red. No. 4291, NVS, D, 6.

T.47a Fragment of the short neck of a vessel with beaded out rim bevelled inside, red-slipped exterior. No. 252, NVS, I, 3.

T.47b Fragment, short neck, flared mouth, rounded edge, exterior red-slipped. No. 240, NVS, I, 3.

T.47c Fragment, thick, grooved, beaded out rim, both surfaces red-slipped. No. 3759, NVS, C, 5.

Carinated vessels (Fig. 118)

T.48 Fragment of a carinated vessel with out-turned beaded rim, probably sagger-ing base, red-slipped exterior, interior coarse red. No. 80, NVS, Y, 4.

T.48a Small fragment of a thick beaded rim, bevelled in, sides thinner and red-slipped on the outside only. No. 42, NVS, Y, 3.

Basin (Fig. 119)

T.49 Fragment of a basin with red wash, ridge at the shoulder, short rounded edge, saggering base, porous surfaces with straw marks. No. 8505, NVS, I, 4.

Kuṇḍā (Fig. 119)

T.50 Fragment of possibly a *kuṇḍā* with flat top, sides getting thinner towards base, core gritty, red wash on both the surfaces. No. 328 NVS, I, 4.

High-necked pot with squat biconical body (Fig. 119)

T.51 Fragment of a pot with red slip on the exterior, squat biconical body, possibly high cylindrical neck. No. 6864, NVS, H, 8.

Small Cup (Fig. 119)

T.52 Fragment of a small cup with moderately high sides, edge slightly turned out' flat base, red wash on both the surfaces. No. 8502, NVS, I, 4.

Rimless Bowl (Fig. 119)

T.53 Fragment of a hemispherical bowl, red wash on both surfaces. No. 643, NVS, F, 8.

T.53a Half of a rimless bowl, bulbous near the base, red wash, sides slightly concave. No. 638, NVS, F, 8.

Beaker (Fig. 120)

T.54 Almost a complete beaker with red wash on both surfaces, grooved and carinated near the base which is flat, concave high sides, edge out-turned. No. 3001, NVS, B, 7.

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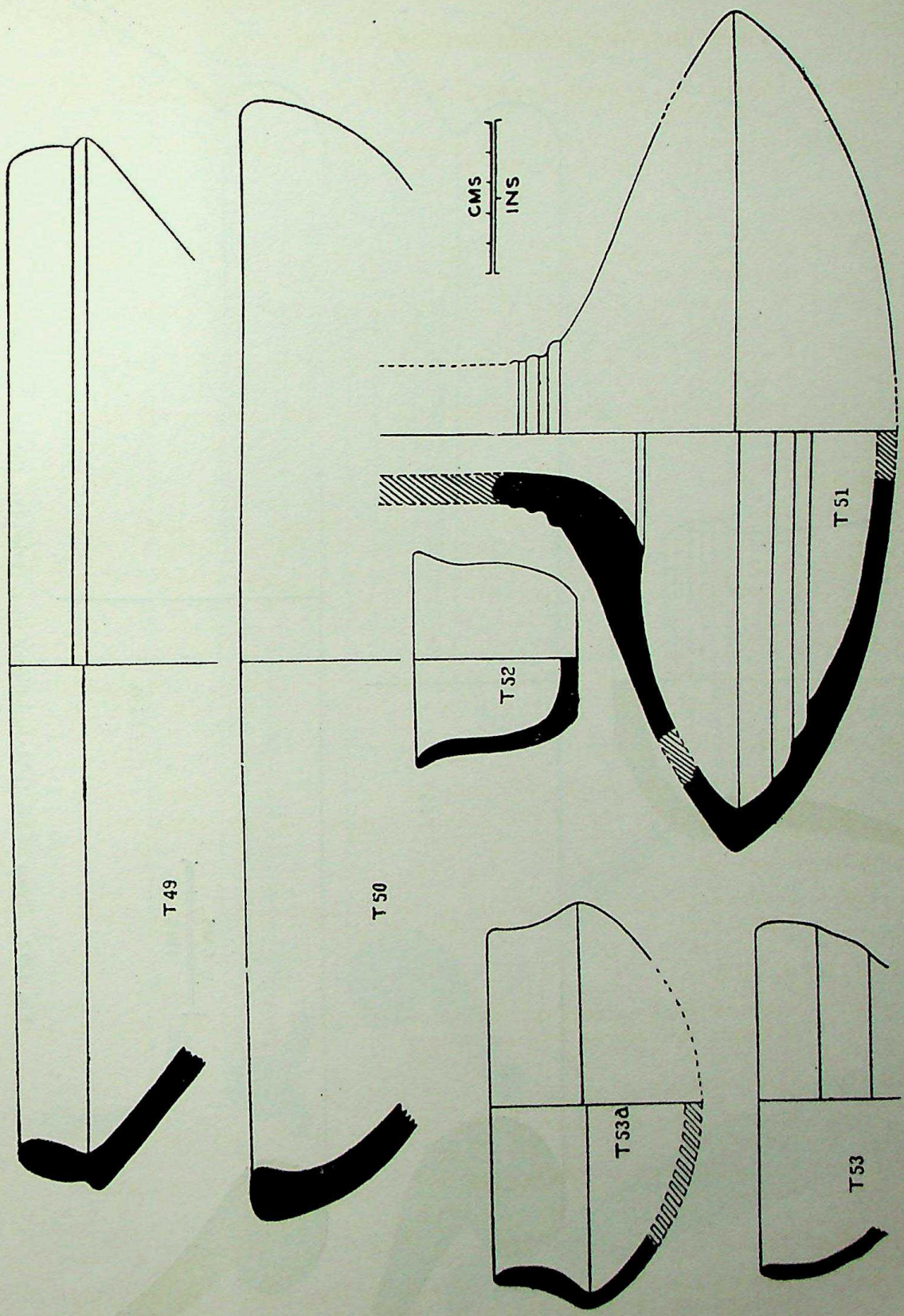

Fig. 119 : Types 49-53a [1/2]. Ware with red slip or wash. Period IV. (See p. 268).

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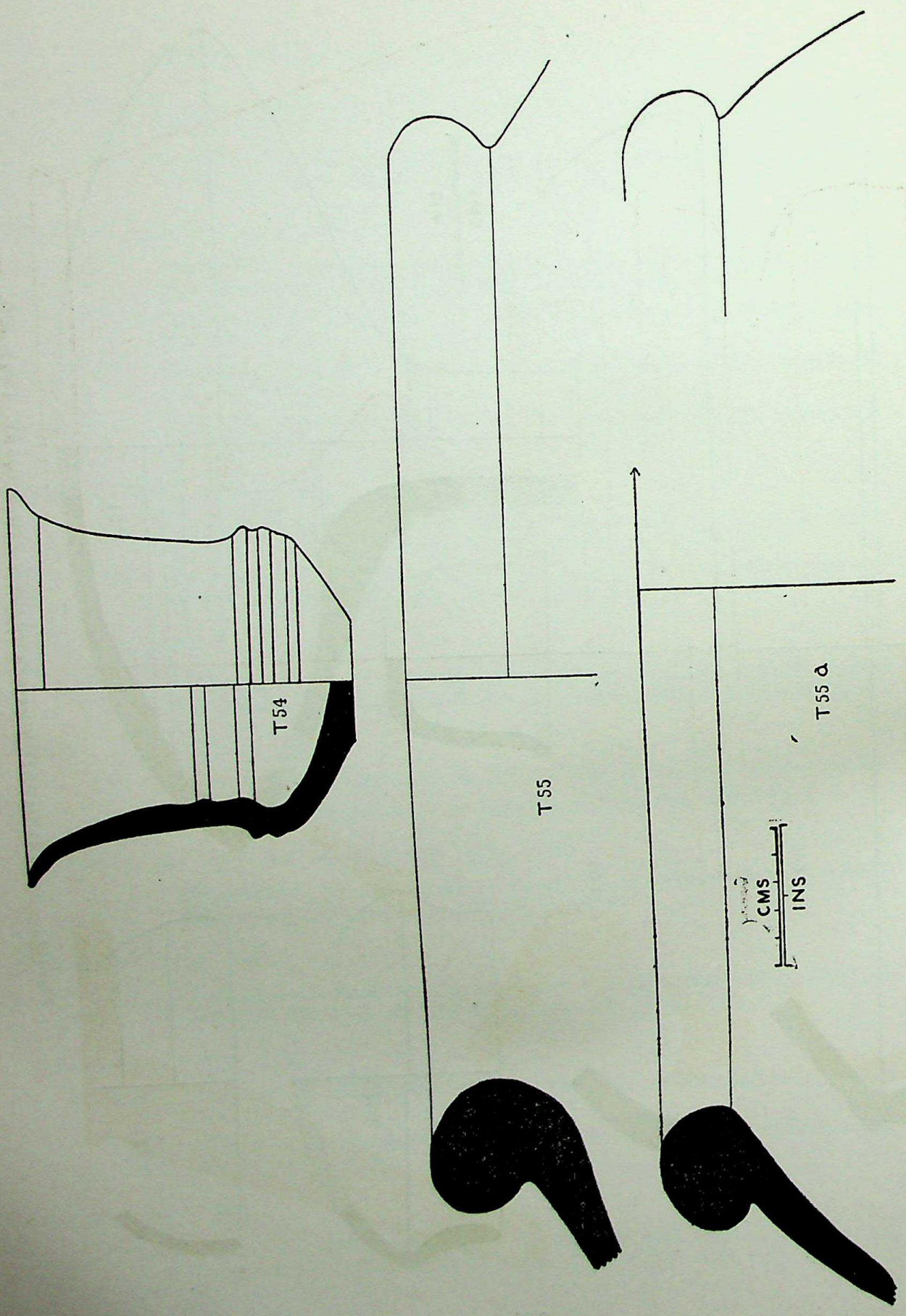

Fig. 120 : Types 54-55a [1/2]. Red-slipped ware, Period IV. (See pp. 268, 274).

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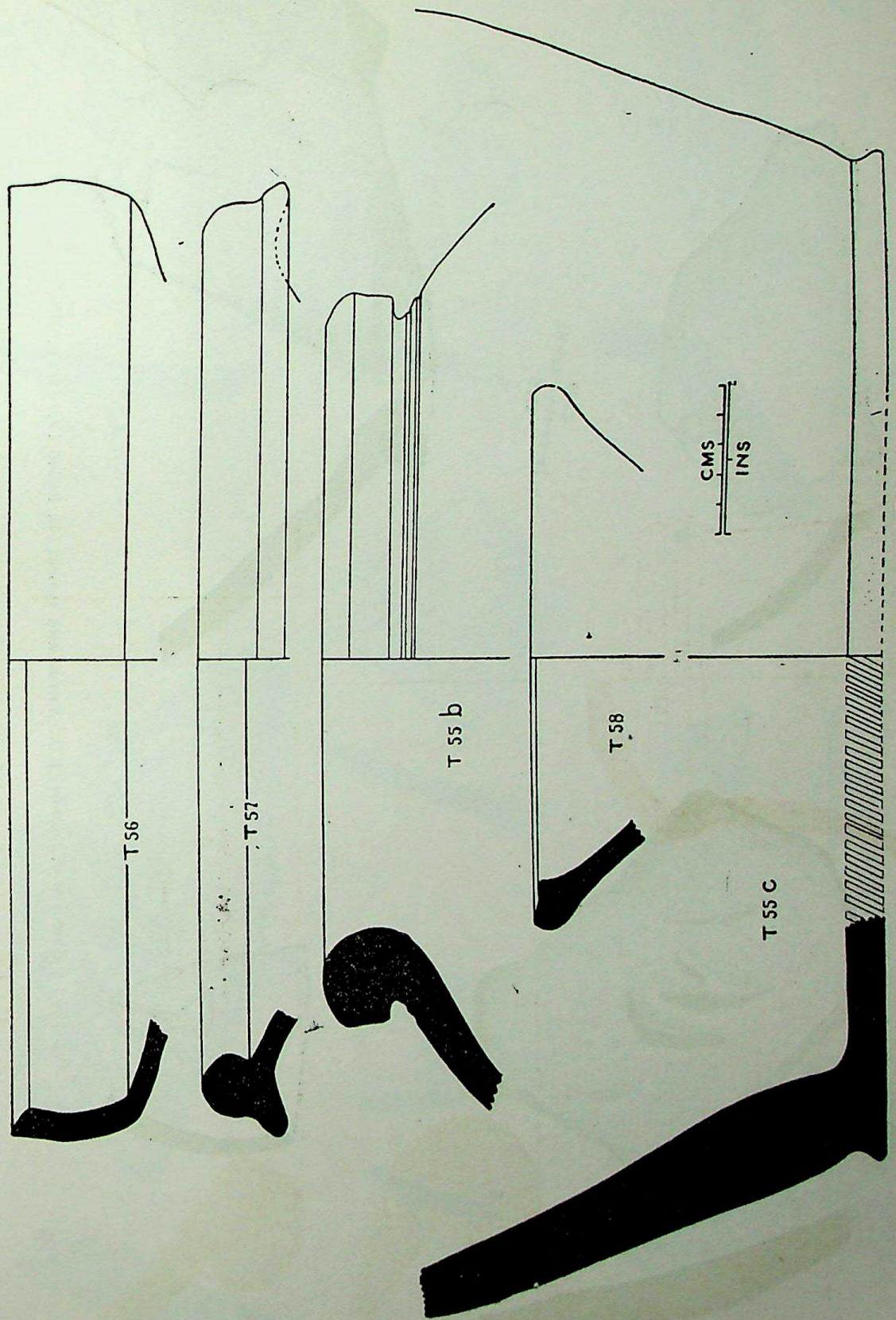

Fig. 121 : Types 55b-58 [1/2]. Red-slipped : (55b, c) ; Red-and-black (56-58). Period V. (See p. 274).

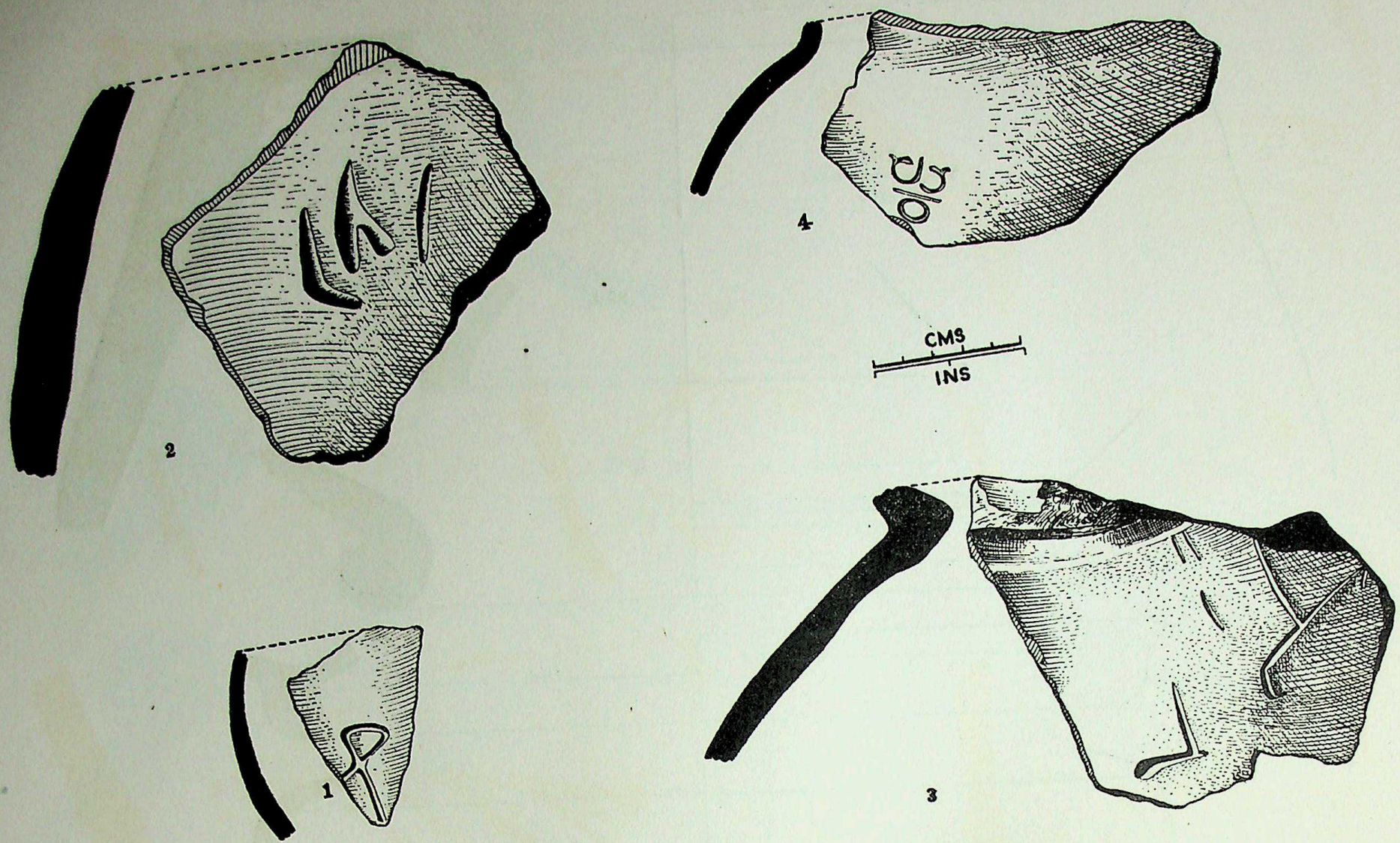

Fig. 122 : Sherds with legends (1-3) ; Sherds with symbol (4). Period IV. (See p. 275).

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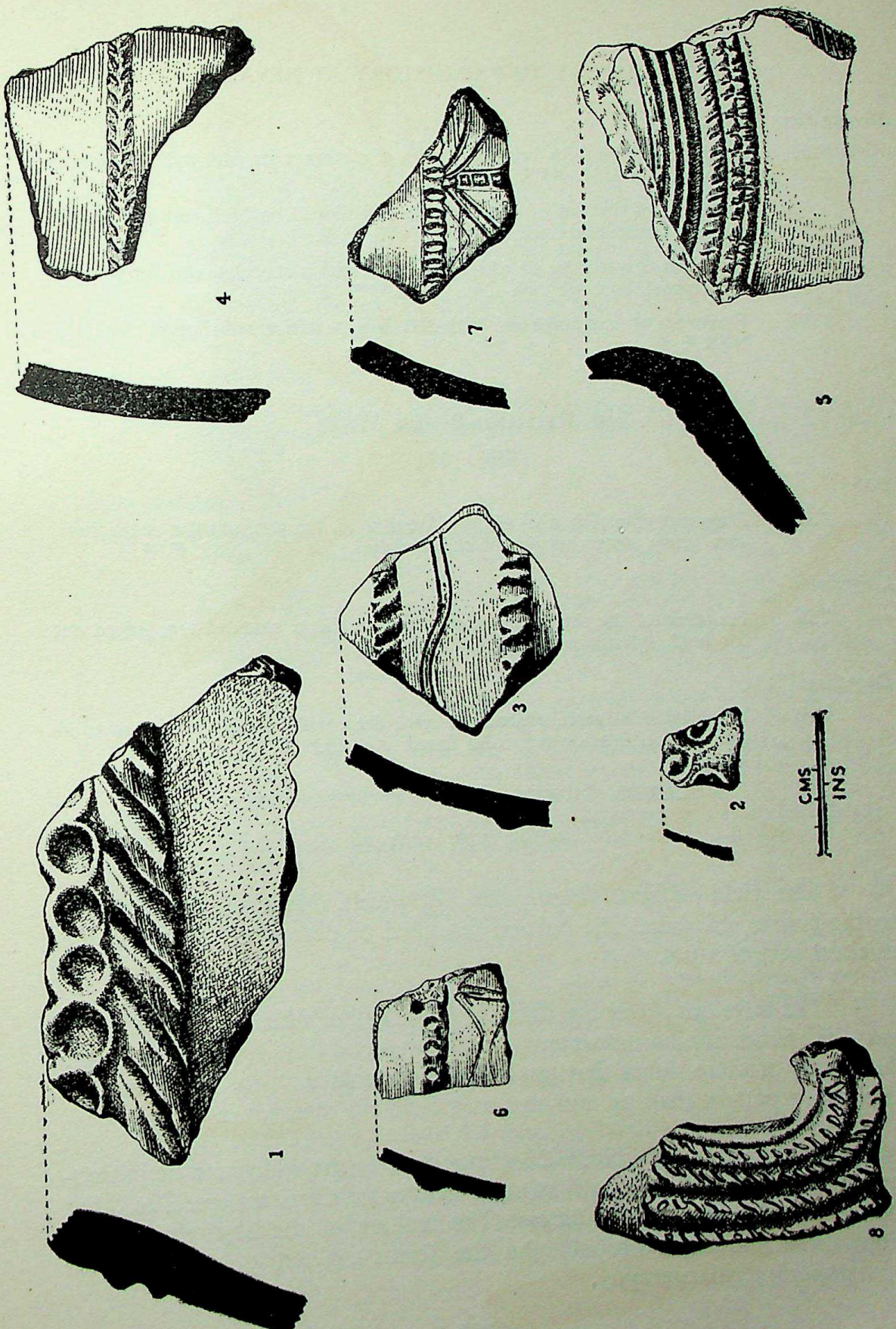

Fig. 123 : Decorated Sherds [1/2], Period IV. (See p. 275).

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Storage Jars (Figs. 120, 121)

T.55 Fragment of the thick beaded-out rim of a storage jar with red slip on both surfaces. No. 3132, NVS, C, 5.

T.55a Fragment of the rim of a storage jar, red-slipped on both surfaces, beaded out rim, constricted neck. No. 678, NVS, F, 9.

T.55b Fragment of a storage jar with the exterior with a chocolate slip, interior dull red-slipped, squared rim. No. 674, NVS, E, 9.

T.55c Fragment of a storage jar with flat base, exterior red-slipped. No. 673, NVS, E, 9.

The Red-and-Black Ware

(Fig. 121)

Dish

T.56 Fragment of a dish with slightly flared sides, flat top, angular at the base, core gritty, outer bottom black burnished. No. 686, NVS, F, 9.

Ledged rim

T.57 Fragment of the rim of a pot of uncertain shape, rounded top, ledged out for hold, interior red. No. 654, NVS, G, 8.

Deep bowl (?)

T.58 Fragment of a vessel, probably a bowl, deep, with rounded edge grooved in the interior, interior red, sides flared. No. 6536, NVS, A, 9.

Inscribed, Incised and Decorated Sherds

(Figs. 122, 123)

The yield of such sherds was not much. Most of these belong to the coarse red ware. The portion inscribed or decorated belongs to the thickest part of a pot.

The *inscribed sherds* are three, one No. 659 of which bears the typical *ma*'- like letter. Similar inscriptions have been found from severals ites so far. The study of these shows that this rounded or angular '*ma*' forms more a decorative pattern than an alphabet as it is found repeated in a chain.

Of the other two, No. 6058 shows three letters which can be palaeographically ascribed to a century or so before the Christian era. The other No. 5859 also shows two letters. The reading of the first alphabet in both these sherds is probable as the forms do not quite tally with contemporary palaeography.

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POTTERY OF PERIOD V

(A) *Sherds with Brāhmī letters* (Fig. 122)

No. 1 Fragment of probably a globular pot, red slipped exterior bearing thickly incised angular Brāhmī inverted '*ma*'-like letter; may be of a decorative system. No. 659, NVS, H, 8.

No. 2 Fragment of a thick storage jar with the outer surface having a red wash, three letters incised with a thick point—'*utara.*' No. 6058, NVS, I, 4.

No. 3 Fragment of a spherical pot with out-turned short rim, coarse red surfaces, outer surface having two letters incised with a comparatively thinner but sharp point—(probably) '*la nu*'. No. 5859, NVS, I, 4.

(B) *Sherd with symbol* (Fig. 122)

No. 4 Fragment of a globular pot with the outer surface having a red wash, interior coarse and uneven, outer surface having an incised '*triratna*' symbol. No. 6912, NVS, H, 8.

(C) *Decorated sherds* (Fig. 123)

No. 1 Fragment of a thick storage jar, red wash outside, on the outer surface an applique band with finger tip and rope design. No. 263, NVS, I, 3.

No. 2 Small fragment, red wash outside, outer surface having horizontal disintegrated running spiral or 'quirk' design. No. 180, NVS, I, 3.

No. 3 Fragment, potsherd with grey slip on the outside, interior coarse red, outer surface having two applique bands with pinched and rope design enclosing a group of two close incised wavy lines. No. 561, NVS, H, 8.

No. 4 Fragment of a thick globular pot with the outer surface having a chocolate wash and incised chevrons or leaves to left. No. 266, NVS, I, 3.

No. 5 Fragment of a globular vessel with the outer surface black-slipped, decorated with groups of grooves and small squares cut out of raised bands below the neck. No. 663, NVS, H, 8.

No. 6 Fragment, outer surface dark chocolate-slipped and with a raised band with shallow circular depressions on it, below incised vertical and wavy horizontal lines. No. 231, NVS, I, 3.

No. 7 Fragment, similar to above, but red-slipped outside, pinched design on applique band capping incised loops. No. 645, NVS, F, 8.

No. 8 Fragment, 'L'-shaped outer surface having suspended applique bands curved at the bottom and cut along the body of the band; one edge of the piece bevelled, oval-shaped perforation in the centre, the piece was possibly applied to the body of a pot as a decoration; both the surfaces originally red but coated with a dull chocolate slip. No. 683, NVS, F, 9.

POTTERY OF PERIOD V

The layers of Period V were the most prolific in the yield of pottery. Apart from the continuation of the fabrics of Period IV, entirely new wares like the Red Polished, Megarian-like, Rouletted, and the Amphora are met with in the layers of this period, on the basis of which these layers can be said to represent a phase of extensive foreign contacts which are totally absent in Period IV.

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Black-and-Red Ware

The black-and-red ware continues to exhibit the same shapes as those in Period IV. The dishes and rimless bowls abound. Besides these two, the basins and *pantīs*, no other shapes are found in this ware during the period under study.

The treatment of this ware from the point of view of the surface treatment and shapes is extremely monotonous. The ware is strictly plain without any decoration either on the outer or inner surface. The only exception is that of a group of grooves which occurs on dishes, bowls and basins. The rims also fail to exhibit any variety—the bevelled and the beaded being the most frequent types. The surfaces show traces of burnishing which, however, in several cases, are highly lustrous.

This ware is much less in quantity and exhibits limited range of shapes. Moreover, no such vessels as storage jars etc. are to be met with in this fabric. It thus indicates that the black-and-red ware was used sparingly for specific uses and occasions.

Unburnished Black-and-Red Ware

This ware is alike in fabric to the one described above save the treatment of the surface. No attempt seems to have been made to slip the surface or to burnish it. Hence this ware gives a very drab appearance.

The shapes are the same as in the burnished variety. The lids and basins persist. A notable variety consists of a bowl-cum-lid, i.e. a vessel which could be used both as a lid and as a bowl.

Tan Ware

The tan ware, though much less in quantity than the rest, shows a better treatment of the surface and a variety of shapes. In several cases, both the surfaces are tan-slipped and burnished. The core is gritty and shows a mixture of fine sand and sometimes hay in the clay.

The shapes represented are mostly globular vessels for smaller storage purposes.

Ware with Red Wash

As in Period IV, this ware is the most abundant in the entire collection of this period. This abundance coupled with a variety of shapes of strictly

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utilitarian order show that it was the ware of everyday use. The shapes comprise globular pots with high necks, possibly for storage purposes, globular pots with short and constricted necks, basins, plates and cups with a stand base.

This ware is made up of very coarse type of clay which contains lot of gritty degrassaint. The treatment of the surfaces shows that there was no attempt at burnishing at all which could have erased the straw cavities formed in firing. However, inspite of this coarse fabric this ware shows some remarkable attempts at ornamentation. In this connection, *T.81c* is worth noting as it shows the effect of artistic pinching of the mouth which results in quarte-foiled outline.

Besides the pots of normal size, this ware provides us with the large size storage jars. Most of these were found in a fragmentary state and had rounded bases. The decorations consisted mostly of the patent finger-tip depressions on an applique band.

Of the rest, *Ts. 87* and *87a*—cups with concave sides, carination at the base and a stand-base—are notable for their shape. This shape continues in the next period i.e. Period VI and is even now in use for incense burning, especially by the Muslims.

Coarse Red Ware

This is the most common ware and runs through all the phases of the historical periods, as is evidenced by the occurrence of a number of identical forms common to Periods IV, V and VI.

It is needless to comment on the most common shapes. However a few of the rest deserve special mention. The first of these comprises a group of small pots (*Ts.95-95e*). The purpose of these is not clear. Whether they were meant to be used as toys by children or were used for some votive purposes, it is not possible to say. Similar pots have been reported from several sites in the Deccan. All these show no signs of use. Some of these have a long stemmed base and it is not possible to ascertain as to how these might have been used. *T.95e* made out of joining two *pantis* is peculiar in shape as well as in decoration.

T.98 of gourd shape, is a common vessel of this period and has been reported from similar levels from Nasik, Kolhapur, Karad, Bahal,

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Prakashe and Ter. It is possible that these vessels being used for the water-wheel were made on a large scale throughout the Deccan.

The globular pot with a short stumpy spout seems to have been introduced during this period only. This shape becomes most common in Period VI, i.e. Muslim-Maratha. As compared to the spouted sprinklers of the Red Polished ware, these are coarse and have no grace. The position of the spout on the globular body shows that such vessels could not be completely filled.

The dough-plates (T.100) continue in this period as well. These seem to originate in Period III at Nevasa and run right through all the subsequent periods. Even now similar doughs made of wood are in use in rural Deccan.

Black-slipped Burnished Ware

This ware is represented by a few sherds. The peculiarities of this ware are that the clay is gritty, firing unsatisfactory and the outer surface is burnished only up to the shoulder portion.

The ware is most abundant in the next period and becomes the standard ware of Period VI as corroborated by its occurrence.

The shapes are also few; as for instance, the globular and the carinated pots. These do not bear any decorations either. As such, this pottery must have been used for everyday utilitarian functions.

The NBP

Two interesting pieces of the red-slipped NBP were found in the layers (F 5 and F 6) of this period.

These sherds bear the typical compact greyish core of well levigated clay so characteristic of the true NBP. The interior in both these cases is also steely blue. The only difference is that the outer surface has an extremely smooth and vermilion red slip, polished and lustrous.

These sherds, therefore, differ from the so far standardised steel-blue NBP ware. In recent years several varieties of the NBP have been brought to light especially at Kausambi. Besides the steel-blue variety, we have NBP with silvery and golden lustre (as at Maheshwar, Kausambi

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and Rajgir), those with a purplish slip and polish (Maheshwar), those with painting in cream yellow and vermilion red on a blue-black slip (Bahal and Kausambi) as also the variety under study which is reported from Kausambi and Prakashe as well. Thus the wide distribution and the wide range of slips have made the reconsideration of the nomenclature of this ware essential.

As to the shapes—bowl (T.110), and a dish (T.111)—there is nothing new.

Painted Andhra Ware

This ware is represented by two sherds which are fragmentary.

As compared to those found at Brahmagiri, Chandravalli, Maski and Nasik, the Nevasa pieces are cruder as the core is a bit gritty and the surfaces unevenly rough. The paintings which consist of loops of oblique strokes is executed in so thick a paste that it can be felt by fingers.

The Red Polished Ware

This occurs for the first time. It thus gives the material evidence for the demarcation between Period V and Period IV.

Most of the three hundred and odd pieces were uniformly bright red slipped and polished. The thickness, however, varied according to the portion of the pot to which the sherd belonged. However, the range of thickness varied between seven and two-and-a-half millimetres. Some of the shoulder pieces bore finger depressions indicating that those parts—especially in the case of a sprinkler—were fashioned in a mould.

The shapes comprise high-necked sprinklers, dishes, small basins, bowls and cups, small globular vessels and lugs. The first is well known and of wide occurrence in the Deccan, Saurashtra and Gujarat, whereas some of the shapes like small basins and globular vessels are decidedly new.[1]

As remarked above, the slip in most of the cases is bright red and bears a high polish. However, in some cases, the slip varies from bright tan to dark brown also. However, in spite of this change of slip which

1. For details regarding the Red Polished Ware, see Sankalia, H.D., Subbarao, B., and Deo, S.B., *op. cit.*, pp. 159 ff.

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might not be intentional, the core is uniformly red and the clay pure. This is markedly apparent in the few Megarian-like sherds found at Nevasa.[1] Unfortunately these sherds are too fragmentary to indicate the probable shape of the pot to which they belonged. However, as the case stands, they are helpful in demarcating the pre-Christian era deposits which precede their occurrence. Besides this distinctiveness of fabric and their dating value, the few Megarian-like sherds are remarkable for the decorative patterns on their outer surface. That these were executed by pressing against the mould is indicated by the finger impressions and the low relief of the decorative pattern. These patterns are either floral or geometrical.

The Rouletted Ware

The rouletted ware was represented by a single sherd (No. 2000, NVS, A, 6). It belongs to the base portion of a dish and bears traces of rouletting. The core is compact grey and the surfaces are black slipped, polished and smooth.

It may be noted that two of the three sherds of the Andhra painted ware were found associated with this rouletted sherd. This association is corroborated by evidence from Brahmagiri, Chandravalli, Maski and Nasik. Thus the occurrence of the Red polished, amphorae, rouletted and the Andhra painted is helpful in dating the deposits of Period V to the early centuries of the Christian era.

The Amphorae pieces

Sixty-three pieces of various parts of the amphorae were found. Of these, ten were handle pieces and the rest belonged either to the base, body or neck portion of an amphora.

All these pieces are of creamy yellow to light brown colour, heavy, and show a mixture of very fine sand in the clay. As many as six varieties in the fabric could be had at Nevasa.

Amphorae have been reported so far from Taxila, Ujjain, Arikamedu, Kolhapur, Ter and Junnar. The Nevasa group, however, has given two sherds with resinous coating. This coating has been explained by Sir Mortimer Wheeler either as " sediment from one of the resinous wines

1. These sherds were sent to Sir Mortimer Wheeler who along Dr. (Miss) Kenyon opined that they were Megarian-like, if not definitely Megarian.

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still familiar in Greece, or it is a deliberate application by the potter to ensure the non-permeability of the jars".[1] The presence of this resinous sediment was also confirmed by chemical analysis.[2] The transit of Roman wine through the ports of the Western coast *via* Junnar to Paithan is thus confirmed by these sherds.

Decorated Sherds

As compared to those coming from Period IV, the decorated sherds of the period under study reveal a marked variety not only in the mode of decoration but also in the design. The former consisted of either puncturing the outer surface by tiny circular dots or by executing the necessary decoration on an applique band of clay or by incising the slip of the pot (graffiti), or by cutting the applique band to required decorative effect in relief or by stamping the outer surface so that the necessary decoration stands out in shallow relief.

The designs arrived at by the various methods described above depict a variety which is mostly geometrical. For instance, slanting rows of dots, circles, triangles, vertical suspended rows of dots and lattice design form the geometrical patterns. The other motifs comprise the well-known finger tip decoration which mostly confines itself to storage jars.

However, the most notable examples of an elaborate decoration come from the graffiti and embossed groups. In the case of the former (Fig. 147, No. VIII) a bird figure is beautifully incised on a small sherd which has been ground to a rectangular shape. It may not be incorrect to suggest that it might have been used as an amulet. Another instance comes from the embossed variety (Fig. 149, No. II). It depicts an animal figure with an upraised tail.

The group depicting religious symbols like the *triratna* and the *svastika* is also noteworthy. The *triratna* forms are sharply stamped whereas the *svastika* with its rounded arms presents its earlier rather than late form.

The painted group is represented by a couple of sherds. There is nothing artistic about them. The painting is done crudely by means of fingers dipped in red ochre. The basic wash consisted of lime over which the red ochre painting was done. There is nothing which deserves a detailed treatment of this painted group.

1. *Rome Beyond the Imperial Frontiers* (Penguin Ed.) p. 180. Dr. Wheeler had seen the sherd and confirmed his observations in a personal communication.
2. See the report by Dr. B. B. Lal, Archaeological Chemist, Govt. of India, Appendix at the end.

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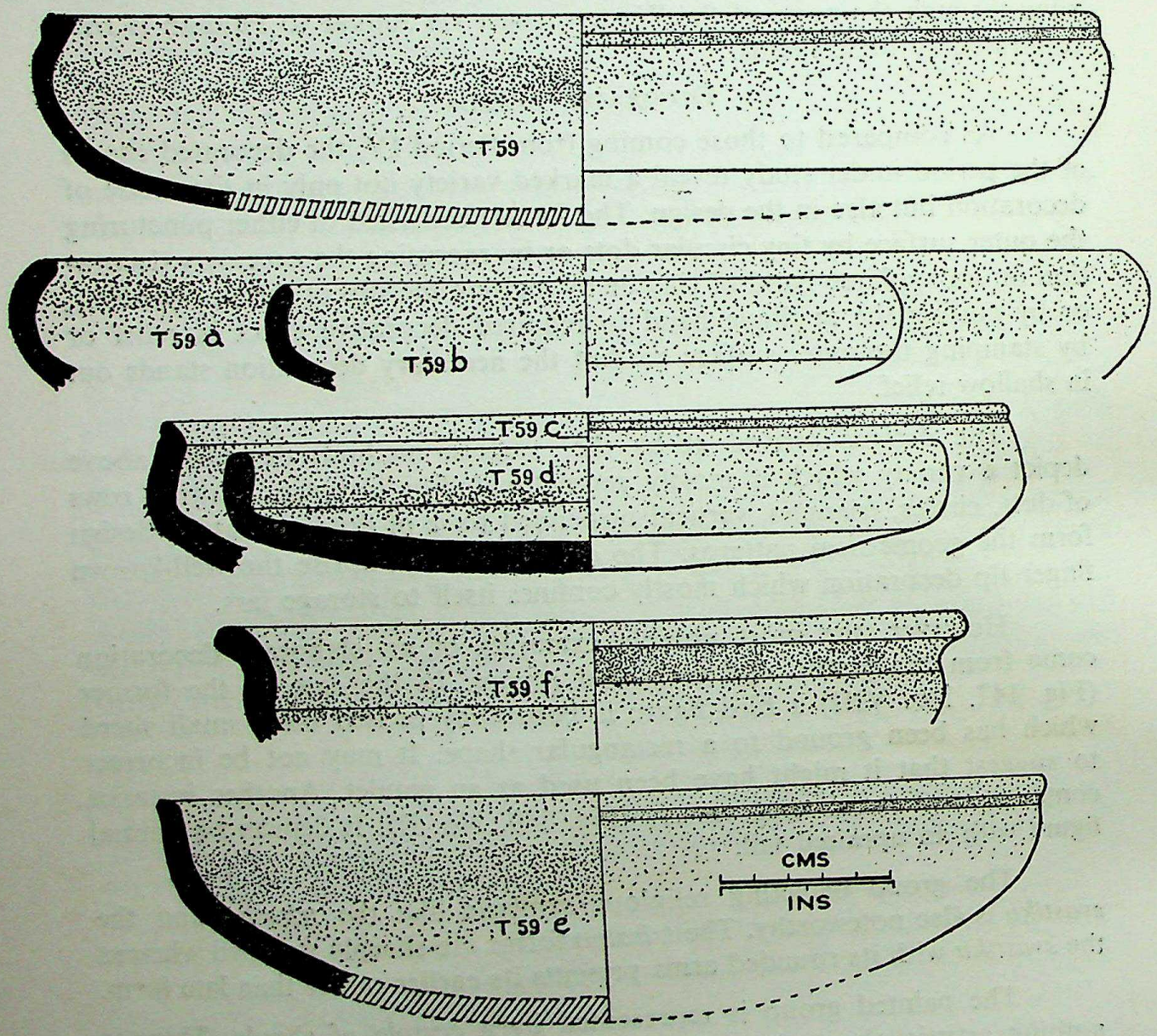

Fig. 124 : Types 59-59f, [1/2]. Black-and-red : Dishes. Period V. (See p. 286).

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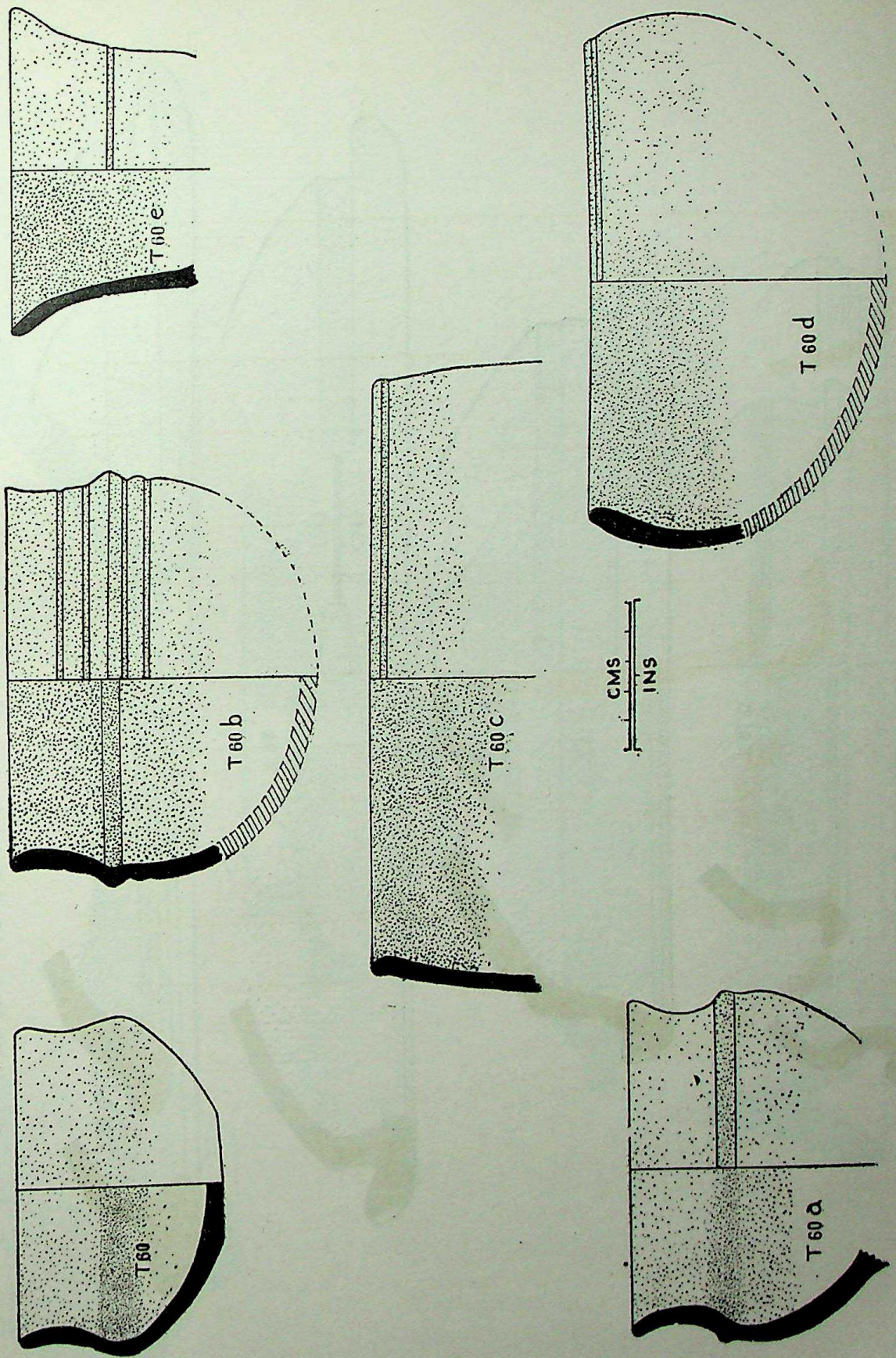

Fig. 125 : Types 60-60e. [1/2]. Black-and-red : Bowls. Period V. (See p. 286).

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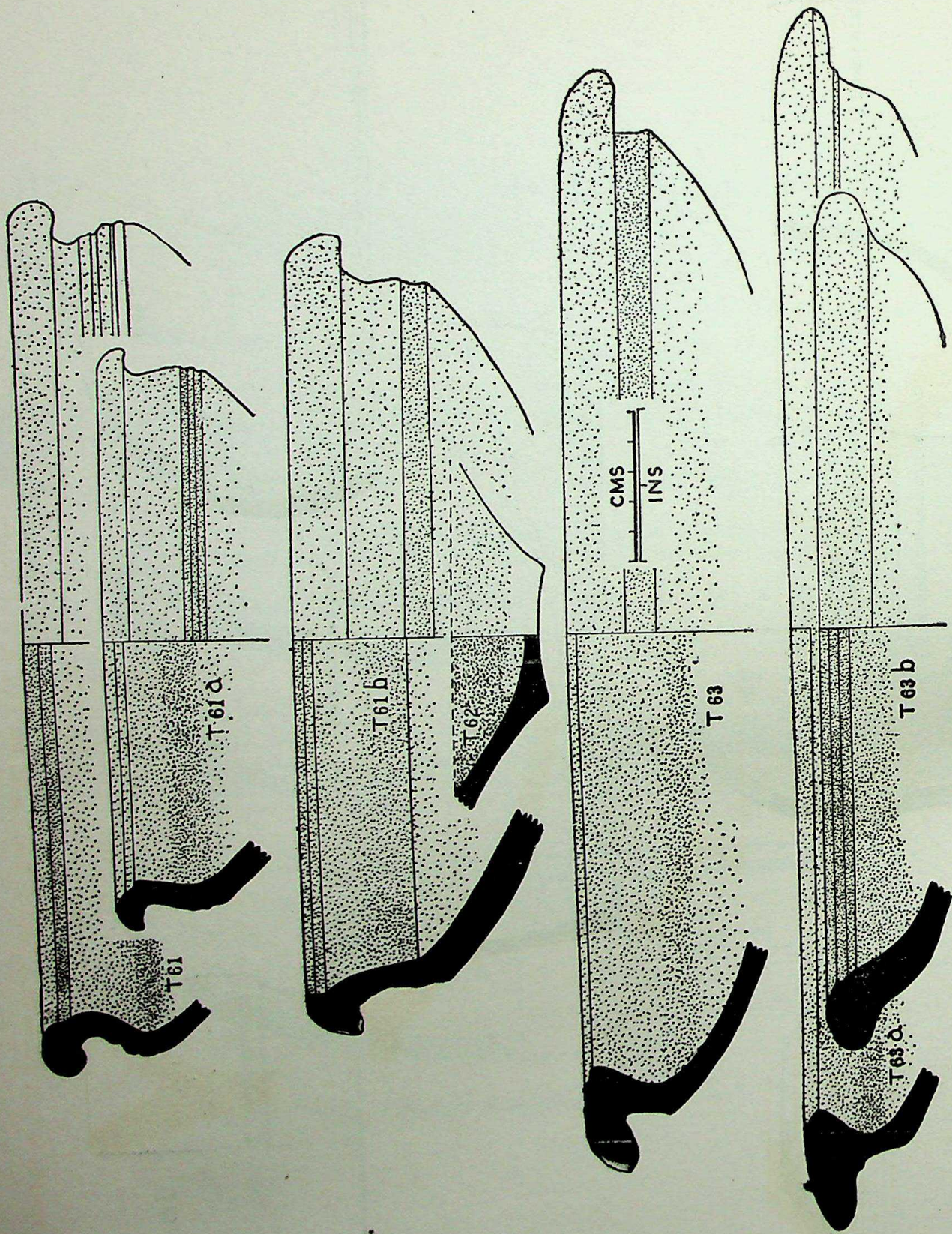

Fig. 126 : Types 61-63b. Black-and-Red : Basins (61-61b); Panti (62); Coarse Bl-and-Rd : Basins (63-63b), Period V. (See pp. 286-287).

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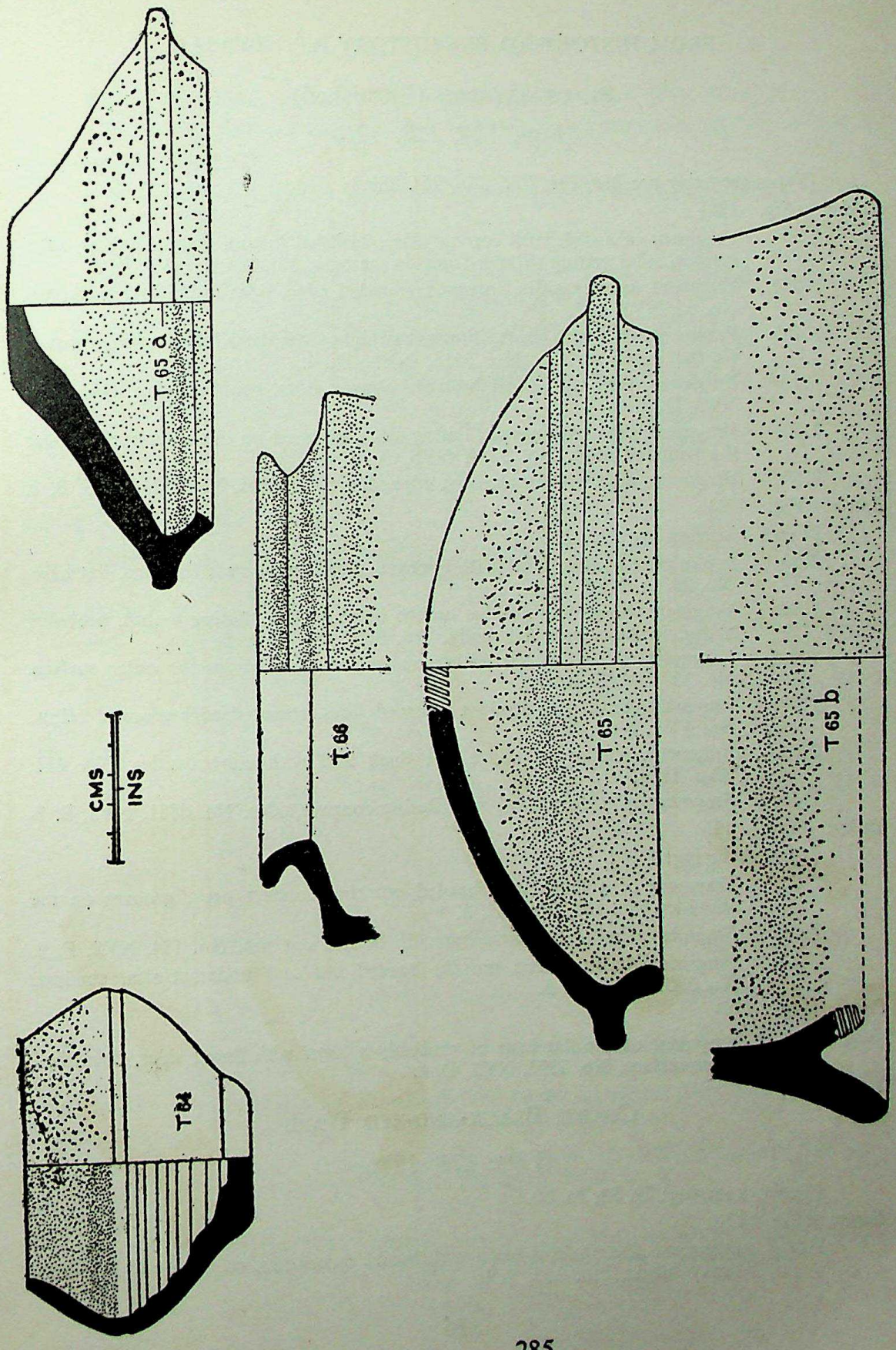

Fig. 127: Types 64-66 [1/2]. Coarse Black-and-red : Bowl-cum-lid (64); Lids, (65-65b). Red-and-black : Carinated Vessel (66). Period V. (See p. 287).

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BLACK-AND-RED (Burnished)

(Figs. 124, 125, 126)

[Types recurring are 28*a*, 28*b*, 28*c*, 28*d*, 28*f*, 28*g*.]

Dishes (Fig. 124)

T.59 Fragment of a dish with convex sides, bevelled in top, groove on the outer surface, sides getting thinner towards the base. No. 4045*a*, NVS, E, 5.

T.59a Fragment, convex sides, inturned rounded edge, sides of uniform thickness. No. 55, NVS, I, 2.

T.59b Fragment, dish with short, inturned straight sides, bevelled in edge, grooved on the outer surface. No. 3417, NVS, D, 4.

T.59d Fragment, dish with short inturned convex sides, rounded edge. No. 2256, NVS, D, 2.

T.59e Fragment, dish with convex flaring sides, grooved on the outer surface near the rounded edge. No. 3534, NVS, A, 5.

T.59f Fragment, dish with beaded-out edge, depressed sides. No. 2021, NVS, B, 2.

Bowls (Fig. 125)

[Types recurring are 29*a*, 29*c*]

T.60 A complete rimless bowl with concave sides, bulge near the turn, flat base. No. 2021*a*, NVS, D, 5.

T.60a Fragment, bowl with a ridge on the outer surface, flaring mouth, probably a discoid base, globular body. No. 3608, NVS, B, 5.

T.60b Fragment, as above but with a ridge and grooves on the outer surface. No. 3505, NVS, B, 4.

T.60c Fragment, bowl with straight inturned sides, rounded edge grooved below. No. 4063, NVS, A, 6.

T.60d Fragment, similar to above but thick and with convex sides. No. 451, NVS, H, 4.

T.60e Fragment of a deep bowl with flaring concave sides. No. 6881, NVS, E, 3.

Basins (Fig. 126)

[Type occurring: *T.30*]

T.61 Fragment of a basin with beaded out rim, concave neck, grooves on the shoulder. No. 169, NVS, H, 3.

T.61a Fragment, similar to above but with beaked out rim. No. 184, NVS, F, 2.

T.61b Fragment, basin, flared mouth, beaded out and undercut rim, shallow. No. 3901, NVS, D, 5.

Panti (Fig. 126)

T.62 Fragment of the flat base of probably a *panti* with flared sides, burnished inner surface. No. 3393, NVS, D, 4.

COARSE BLACK-AND-RED WARE

(Figs. 126, 127)

[Types occurring: 29, 33, 36, 60.]

Basins (Fig. 126)

T.63 Fragment of a shallow basin with broad spread-rim, carination at the turn, heavy fabric. No. 153, NVS, I, 2.

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T.63a Fragment, as above but without carination. No. 3708, NVS, B, 3.

T.63b Fragment, a basin with flared wide mouth, rounded edge. No. 229, NVS, H, 3.

Bowl-cum-lid (Fig. 127)

T.64 Half of a lid-cum-bowl bulged in the middle, base or top discoid. No. 286, NVS, D, 3.

Lids (Fig. 127)

T.65 Almost a complete lid with domical roof, ledged, hanging lip to fit in the mouth of the container. No. 5100, NVS, E, 4.

T.65a Almost complete, as above, but with truncated conical roof. No. 605, NVS, H, 7.

T.65b Fragment of a lid with sub-spherical roof, deep in-cut ledge. No. 2831, NVS, D, 3.

Red-and-black Ware

(Figs. 127, 128)

Carinated Vessel (Fig. 127)

T.66 Fragment of a carinated pot with out-turned short rim, exterior blotchy, interior tan, burnished and slipped surfaces. No. 2083, NVS, B, 2.

Short-necked Vessels (Fig. 128)

T.67 Fragment of the mouth and short neck of probably a globular vessel with ledged rim, surfaces burnished but fissured. No. 3829*a*, NVS, D, 5.

T.67a Fragment, as above but ledge not prominent, straight-sided mouth with rounded top, interior red-slipped. No. 3829, NVS, D, 5.

Dish (Fig. 128)

T.68 Fragment of a dish with flat top, sides convex and getting thinner towards the base, interior black-slipped and burnished, outer surface red slipped. No. 1553, NVS, D, 3.

Tan-slipped Ware

(Fig. 128)

[Types occurring in this ware: 28, 28*c*, 28*f*.]

Carinated Vessels

T.69 Fragment of a vessel with beaded out rim, carination at the shoulder. No. 138, NVS, E, 2.

T.69a Fragment, similar to above but with ridged carination, out-turned rounded edge. No. 2174, NVS, C, 2.

T.69b Fragment, with short shoulder and ridged carination. No. 2090, NVS, B, 2.

Globular Vessel

T.70 Fragment of a globular vessel with short shoulder, out-turned flat rim, grooved below the shoulder. No. 2183, NVS, D, 2.

High-necked vessel

T.71 Fragment of the beaded-out rim of possibly a globular pot, inner surface coarse black, outer tan-slipped and burnished. No. 3626, NVS, B, 5.

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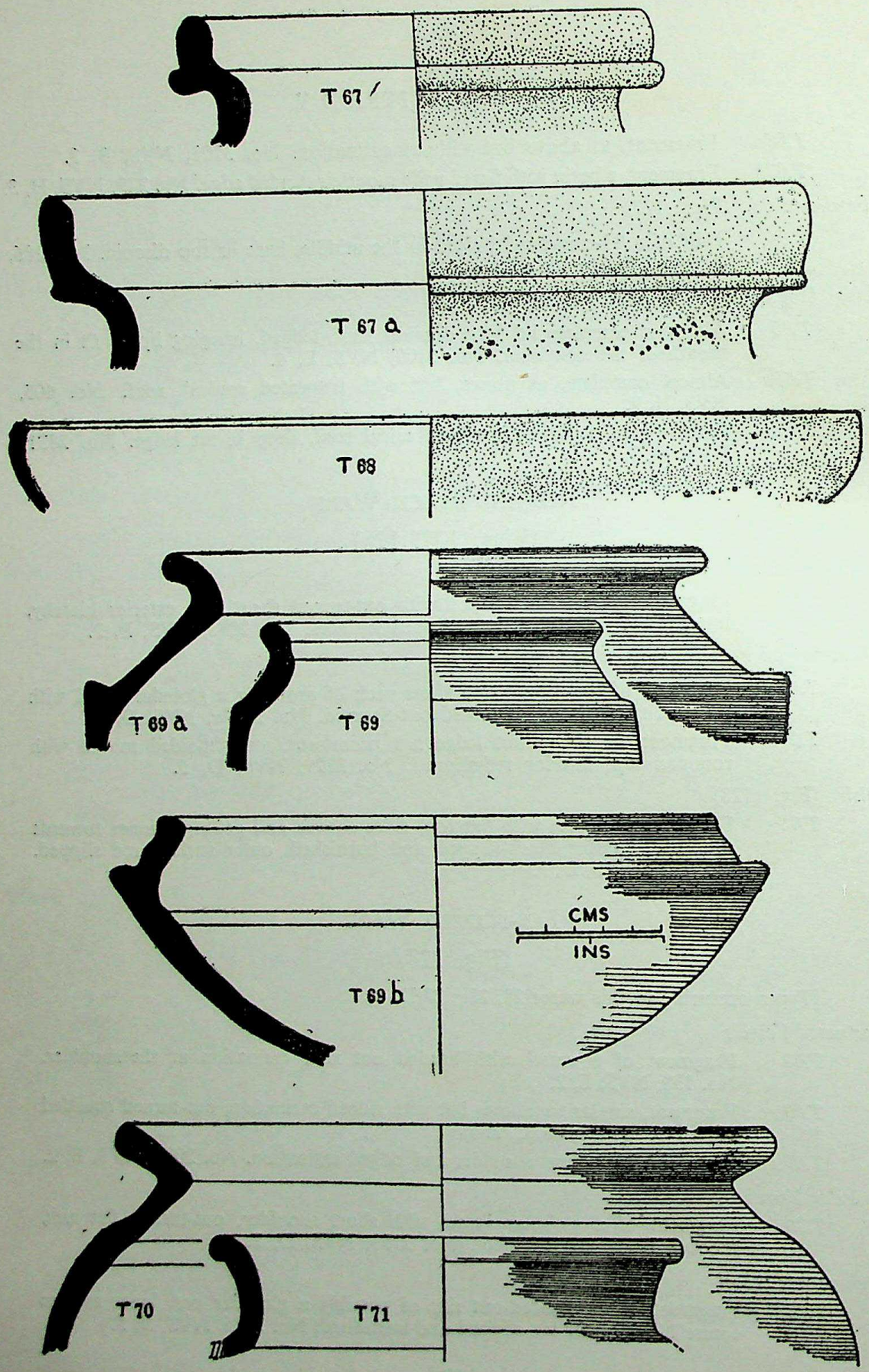

Fig. No. 128: Types 67-71 [1/2]. Red-and-black : Short Necked vessels (67, 67a) ; Dish (68) ; Tan Ware Carinated vessels (69-69b) ; Globular Vessel (70), High-necked vessel (71), Peried V. (See p. 287).

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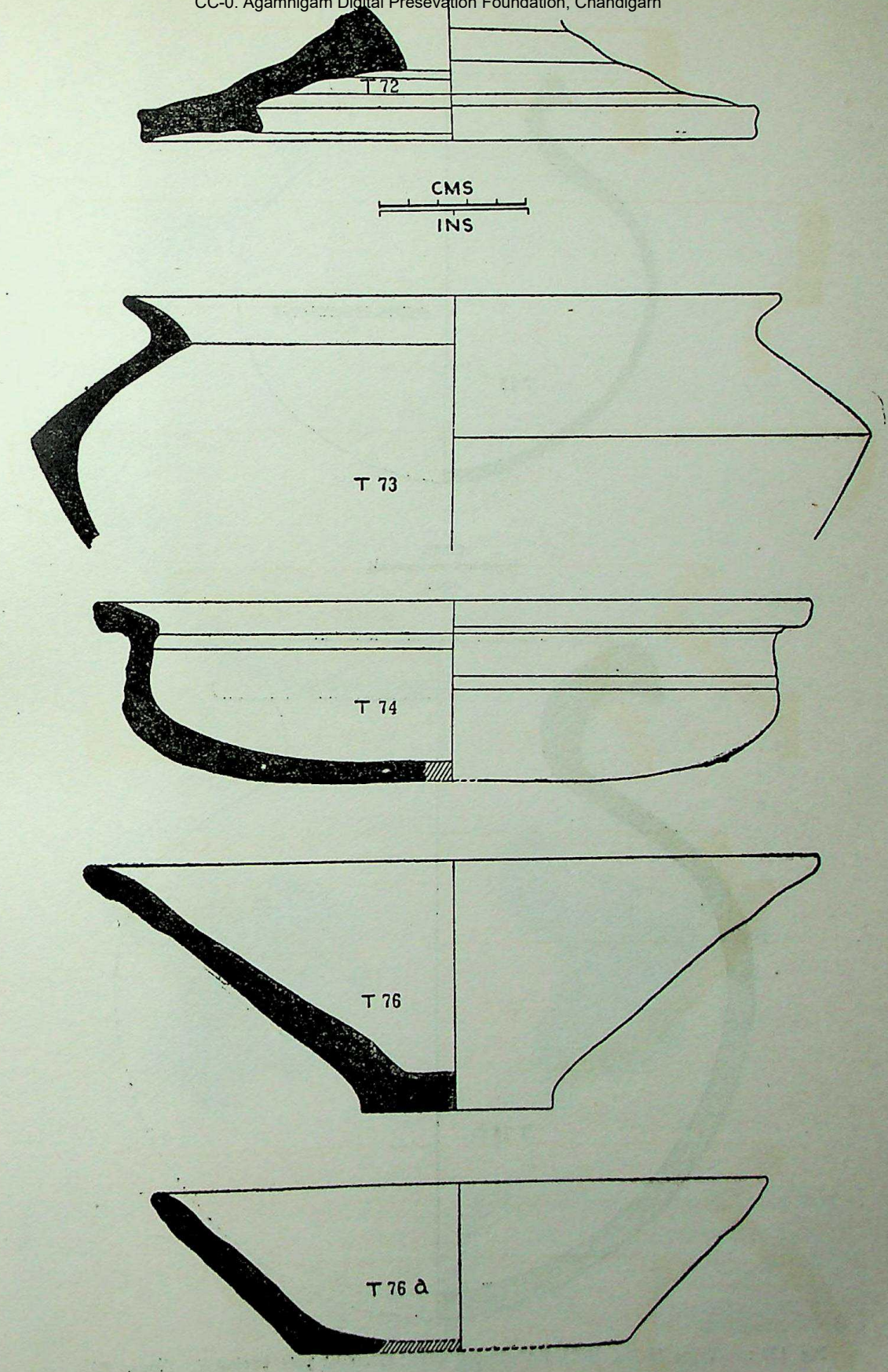

Fig. 129 : Types 72-74, 76-76a [1/2]. Chocolate ware : Stand (72) ; Red-slipped ware : Carinated pot (73) Basin (74), Panti (76, 76a). Period V. (See p. 292).

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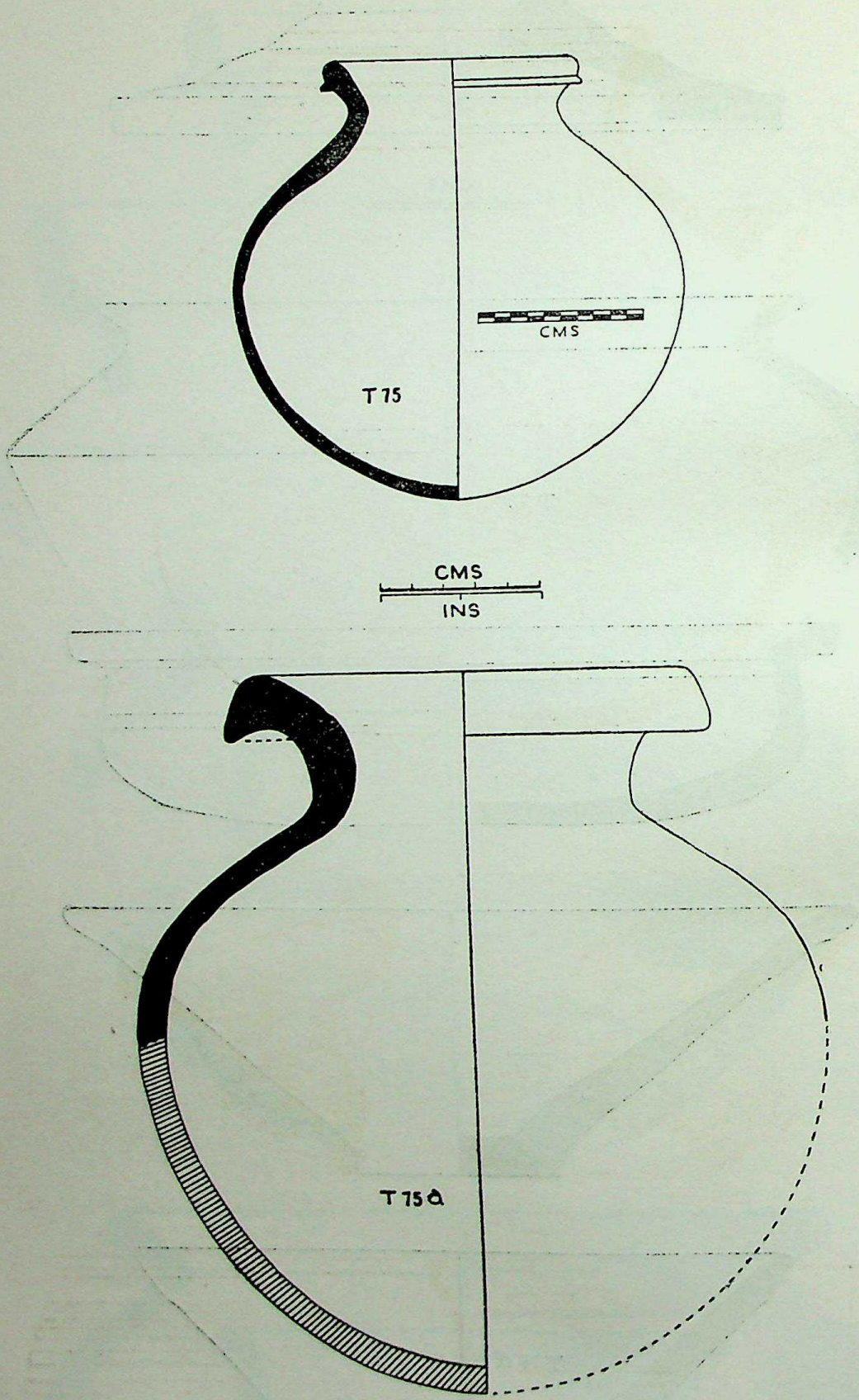

Fig. 130 : Types 75-75a, [1/2]. Red-slipped ware : Globular pots. Period V. (See p. 292).

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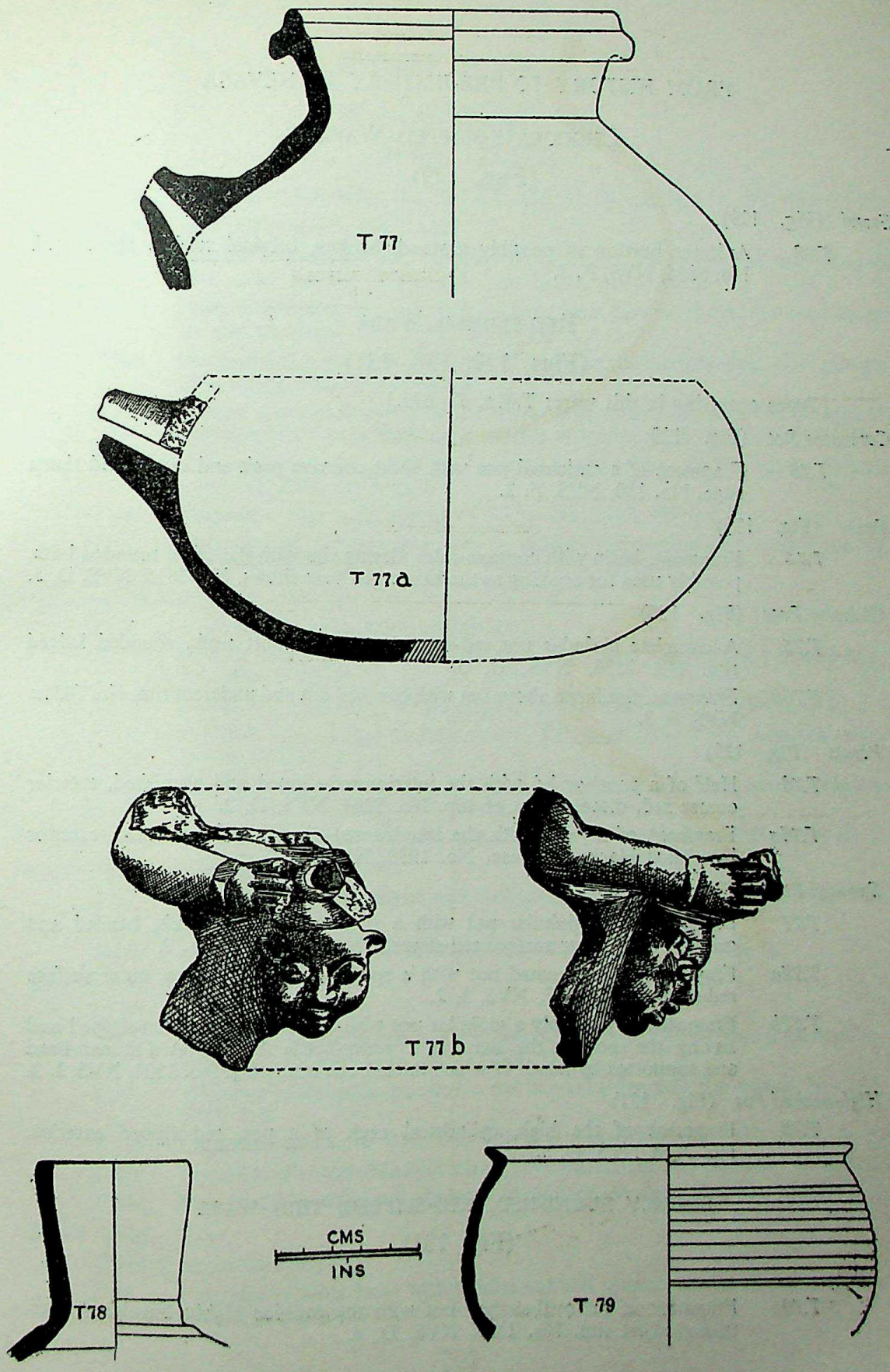

Fig. 131 : Types 77-79. Red-slipped: Spouted pots (77,77b); High-necked (78). Burnished Red-slipped : Bowl (79). Period V. (See p. 292).

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CHOCOLATE-SLIPPED WARE

(Figs. 129)

Stand (Fig. 129)

T.72 A lower portion of possibly a stand, broken, original surface coarse red. No. 5956, NVS, F, 7.

RED-SLIPPED WARE

(Figs, 129, 130, 131)

[Types occurring in this ware: T.48*a*, 67, 69*a*.]

Carinated Pot (Fig. 129)

T.73 Fragment of a carinated pot with short concave neck and out-turned sharp edge. No. 180, NVS, F, 2.

Basin (Fig. 129)

T.74 Fragment, basin with concave-sides, flaring rim with flat edge, rounded base, possibly used for cooking as the blackened base shows. No. 3815, NVS, D, 5.

Globular Pots (Fig. 130)

T.75 A complete globular pot red-slipped exterior, short neck, rounded ledged rim. No. 7836, NVS, H, 3.

T.75a Fragment, similar to above but with bevelled out and undercut rim. No. 7836*a*, NVS, B, 3.

Pantis (Fig. 129)

T.76 Half of a *panti* or lid with the interior red-slipped and burnished, exterior coarse red, discoid base or top. No. 2264, NVS, D, 2.

T.76a Fragment of a *panti* with the interior red-slipped and burnished, exterior burnished black, flat base. No. 1930, NVS, A, 2.

Spouted Pots (Fig. 131)

T.77 Fragment of a globular pot with a short-spout, short neck, banded and grooved rim, outer surface red-slipped. No. 1901, NVS, A, 2.

T.77a Fragment of a carinated pot with a spout, oblong in outline, outer surface red-slipped. No. 137, NVS, I, 2.

T.77b Fragment of probably a globular pot with the outer surface red-slipped and having the spout in the shape of a water-bottle shown over a human head and supported by hands of which the left one is missing. No. 1504, NVS, I, 2.

High-necked Pot (Fig. 131)

T.78 Fragment of the high, cylindrical neck of a pot, red-slipped exterior. No. 3138, NVS, D, 5.

HIGHLY BURNISHED, RED-SLIPPED, THIN WARE

(Fig. 131)

Bowl

T.79 Fragment of an oval-shaped pot with the exterior highly burnished, out-turned short rim. No. 1829, NVS, D, 4.

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POTTERY OF PERIOD V

WARE WITH RED WASH

(Figs. 132-137)

[Types occurring in this ware: T. 28*a*, 28*d*, 28*f*, 30, 33, 51, 54, 55*a*, 59*d*, 66*b*, 77, 78.]

Globular Pots with high neck (Fig. 132)

T.80 Almost a complete pot, globular in outline, high corrugated neck, banded rim, outer surface red-washed. No. 1829a, NVS, D, 5.

T.80a Almost complete pot with high concave neck, rounded edge, flat base, bulged at the shoulder. No. 3134, NVS, D, 5.

T.80b Fragment of a pot with a short oval body, banded ledged rim, spout perforation extant. No. 1890a, NVS, F, 2.

T.80c Almost a complete pot with a narrow cylindrical high neck with obliquely cut edge, short ovate body, outer surface with a red wash. No. 1900, NVS, D, 5.

T.80d Fragment of a high neck with a ridge in the centre, flared mouth, bevelled edge. No. 2748, NVS, C, 3.

T.80e Fragment, high neck, rim as of T.75a. No. 2142, NVS, 6, 4.

T.80f Fragment of a high neck with a ledged, converging and ringed mouth. No. 2042, NVS, C, 2.

Short necked pots (Fig. 133)

[T.70 and T.80b occur in this cateogry.]

T.81 Half of a globular pot with short concave neck, out-turned rounded rim. No. 1984, NVS, B, 2.

T.81a Fragment, as above, having a ridge at the shoulder. No. 135, NVS, E, 2.

T.81b Complete pot bulged in the centre, flat base, out-turned rounded edge. No. 68, NVS, I, 2.

T.81c Complete pot, similar to above but bigger in size, flat base, mouth pinched resulting in four lips. No. 3043, NVS, D, 5.

T.81d Complete, barrel shaped pot, mouth as that of above. No. 1953, NVS, D, 5.

Pots with constricted neck (Fig. 133)

T.82 Fragment of a globular pot with constricted neck and flattened rim. No. 343, NVS, G, 3.

T.82a Fragment, as above but with grooved rim. No. 3287, NVS, B, 4.

Storage Pots (Fig. 134)

[T.55a occurs in this period.]

T.83 Fragment of a big storage pot with beaded out rim with finger-tip decoration, short concave neck. No. 3018, NVS, D, 3.

T.83a Fragment of a storage pot with a flat banded ledge near the mouth. No. 155, NVS. I, 2.

T.83b Fragment, similar to T.83, but with a grooved rim. No. 3539, NVS, A, 5.

T.83c Fragment of a thick-sided pot with a bevelled banded rim. No. 200, NVS, G, 2.

T.83d Fragment of a thick pot, rimless and with raised neck. No. 444, NVS, H, 3.

Basins (Fig. 135)

[Type 49 occurs in this.]

T.84 Fragment of a big basin with beaded out and spread rim, bevelled in, convex sides. No. 3614, NVS, D, 5.

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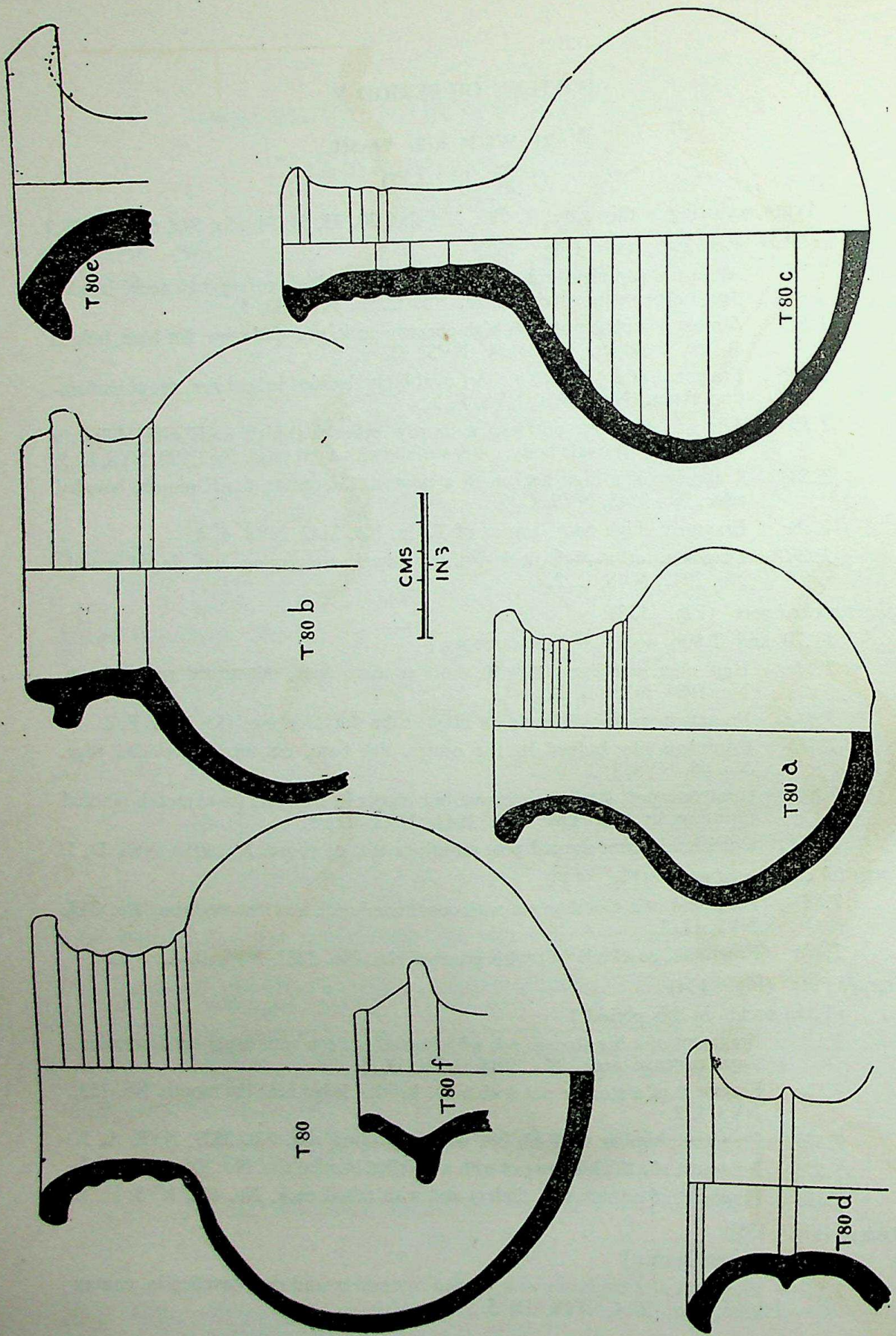

Fig. 132 : Types 80-80f [1/2]. Ware with red wash : Globular Pots. Period V. (See p. 293).

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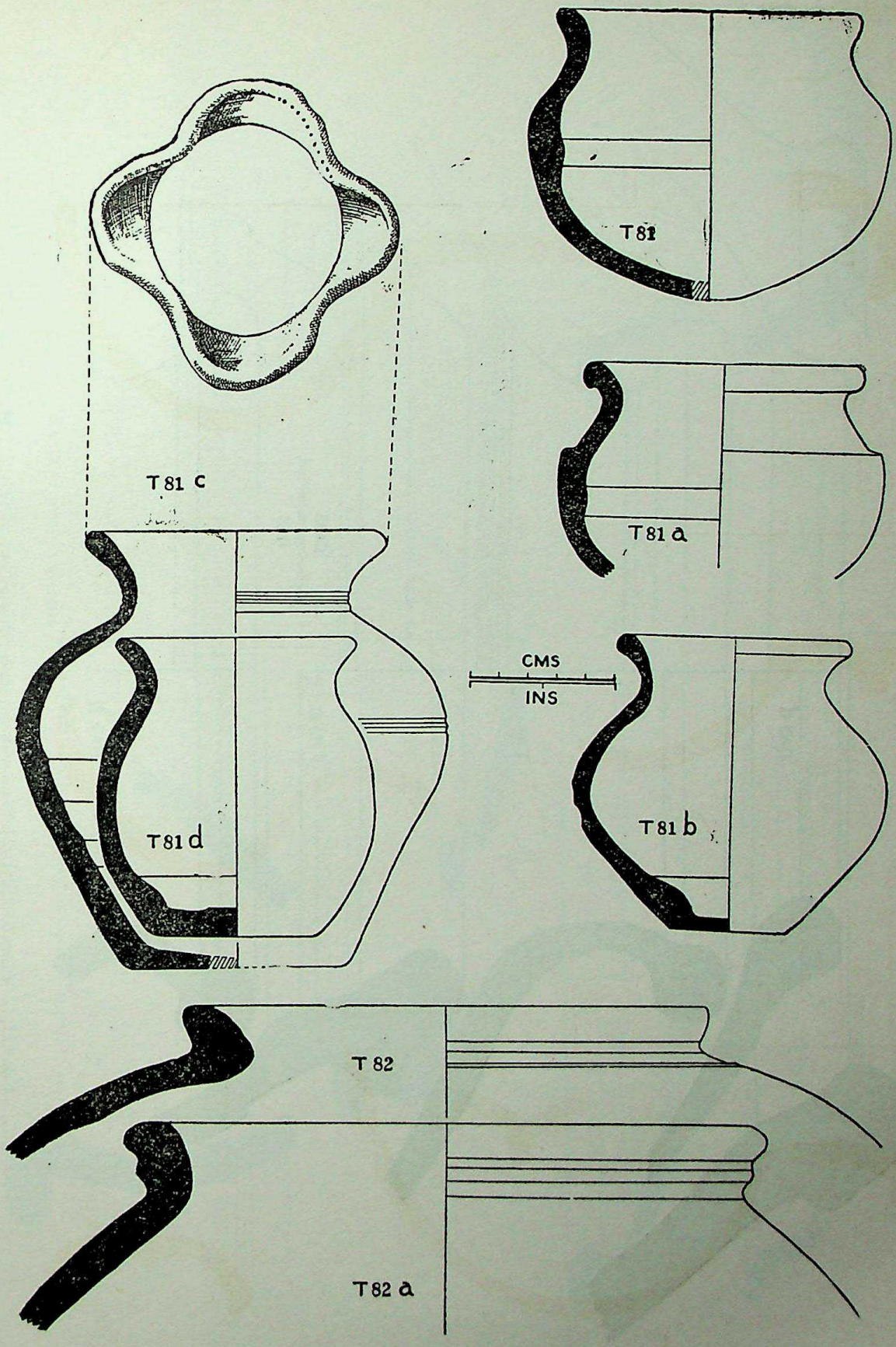

Fig. 133 : Types 81-82a [1/2]. Ware with red wash : Short-necked pots (81-81d) ; Pots with constricted neck (82-82a). Period V. (See p. 293).

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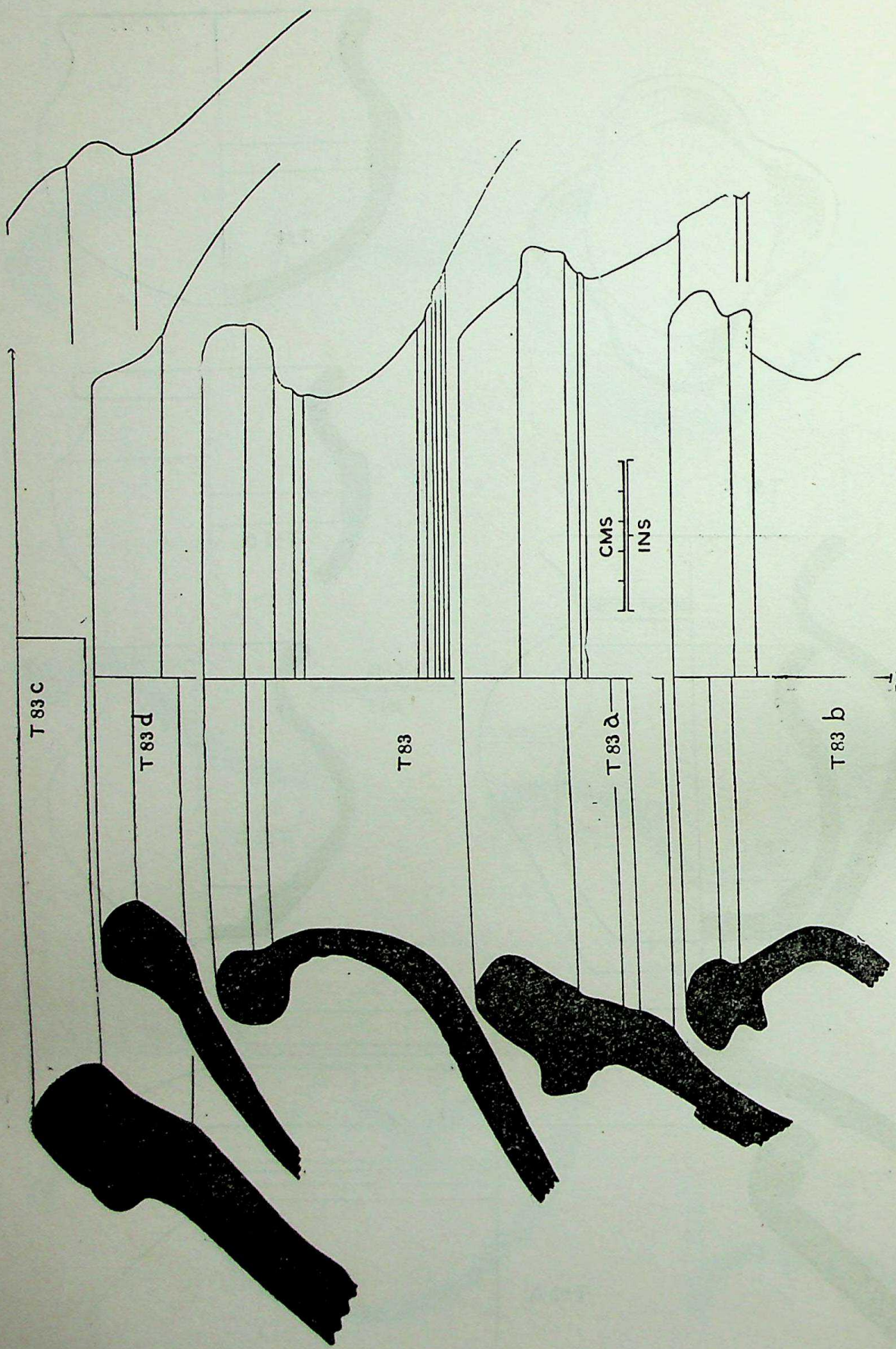

Fig. 134 : Types 83-83d [1/2]. Ware with red wash : Storage jars. Period V. (See p. 293).

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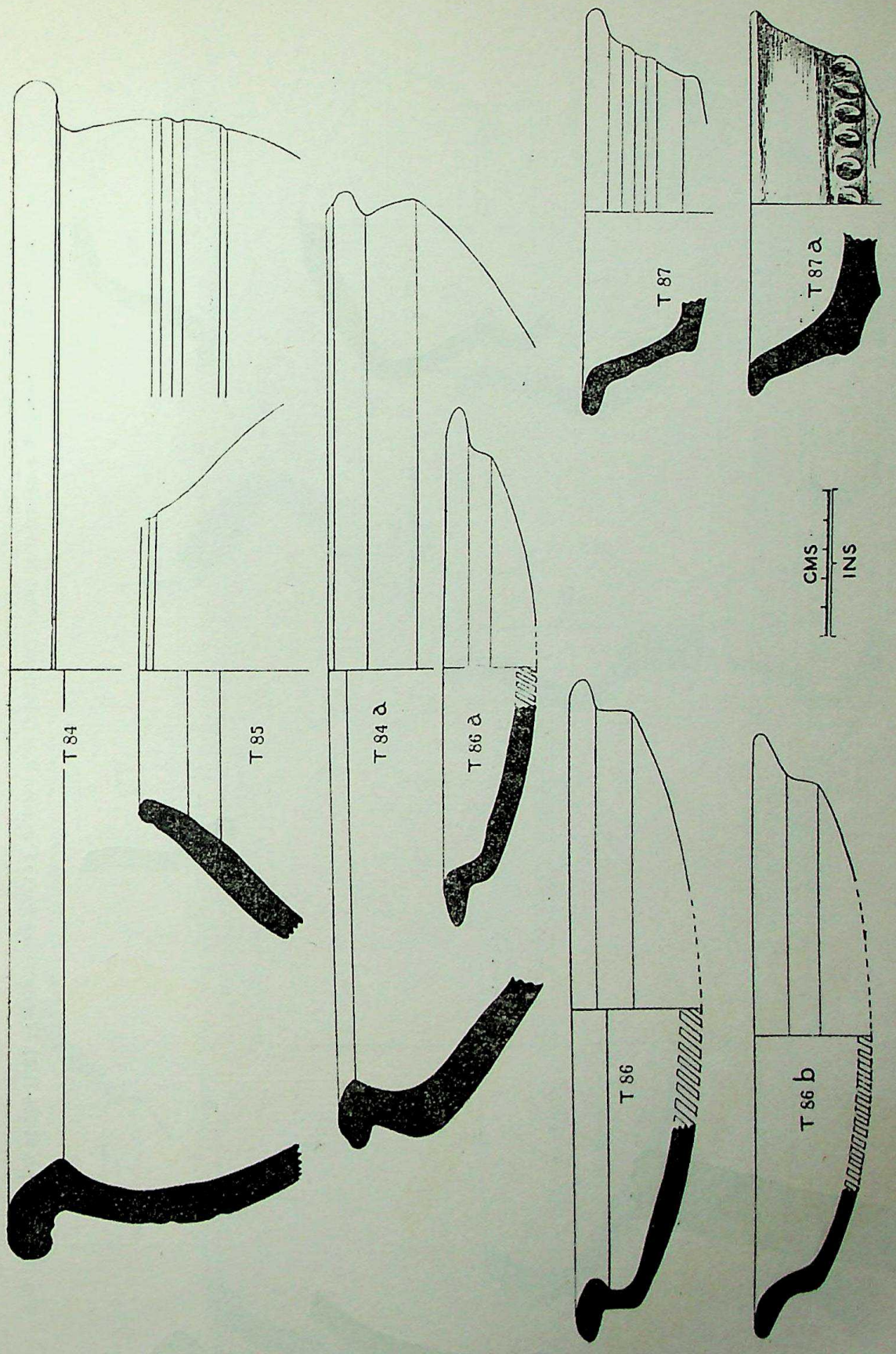

Fig. 135 : Types 84-87a [1/2]. Ware with red wash : Basins (84-84a), Rimless pot (85), Plates (86-86b). Carinated cups (87-87a). Period V. (See pp. 293, 300).

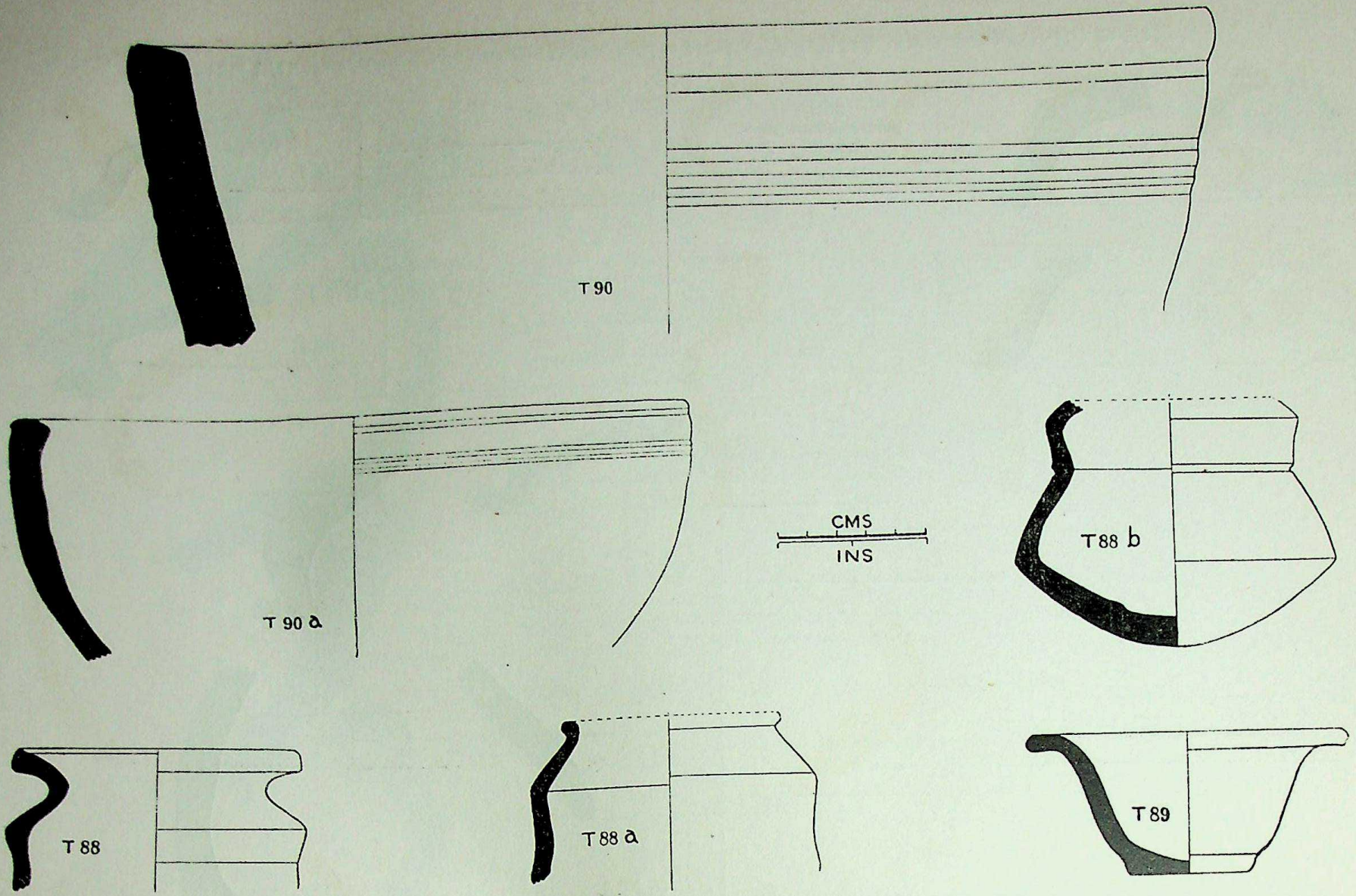

Fig. 136 : Types 88-90a [1/2]. Ware with red wash : Carinated Pots (88-88b), Cup (89), Kuṇḍās (90-90a). Period V. (See p. 300).

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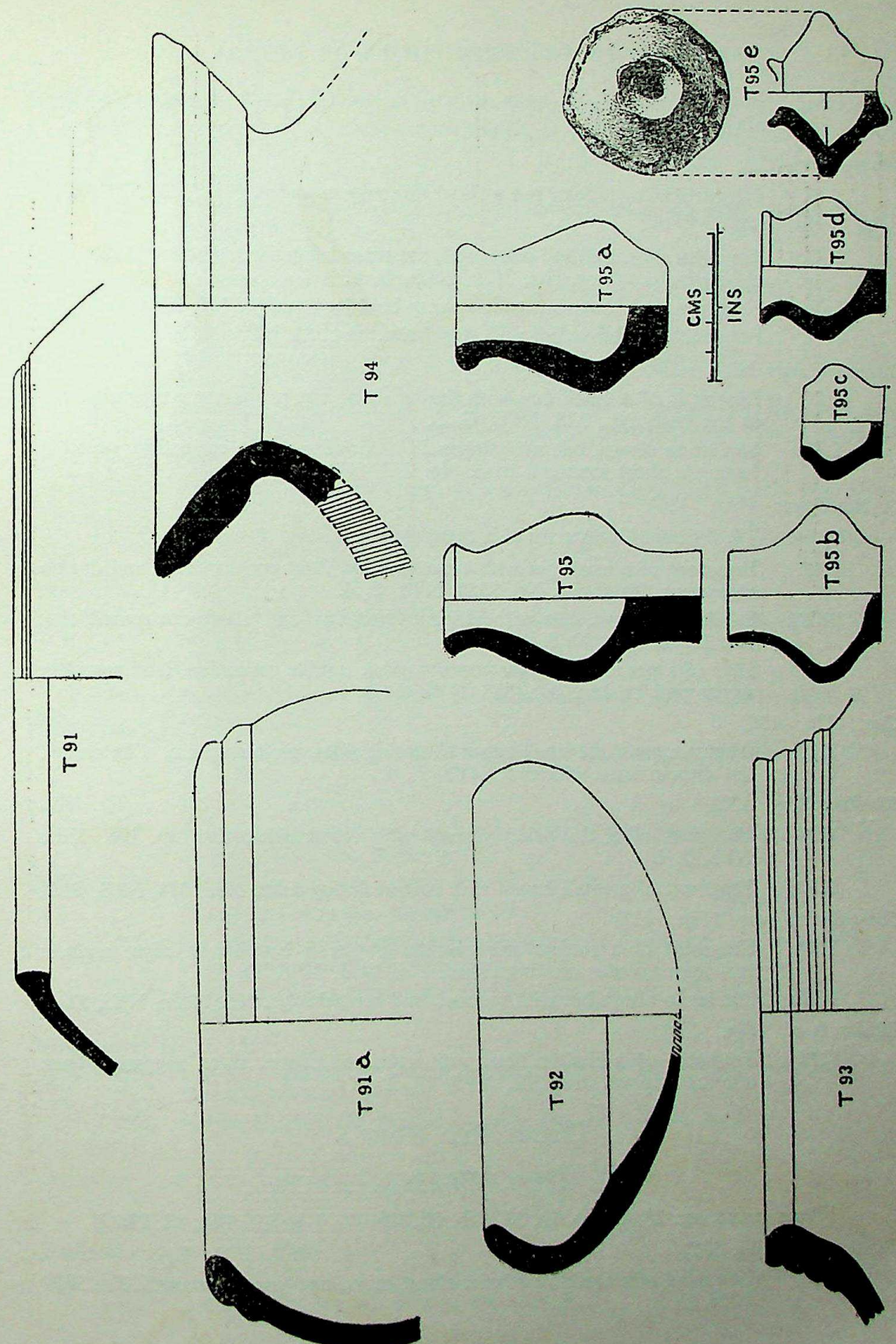

Fig. 137 : Types 91-95e [1/2]. Ware with red wash : Sub-spherical Pots (91-91a), Rimless bowl (92), Coarse red ware : Rimless Pot (93), Mouth-piece (94), Small pots (95-95e). Period V. (See pp. 300-301).

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T.84a Fragment of a smaller basin with an insignificantly rounded edge. No. 125 NVS, I, 2.

Rimless Pot (Fig. 135)

T.85 Fragment of a globular pot without rim, edge rounded. No. 3571, NVS, A, 5.

Plates (Fig. 135)

T.86 Fragment of a shallow plate with out-turned flat rim, red-slipped interior, red-washed exterior. No. 3186, NVS, B, 4.

T.86a Fragment, as above, but with a sharp broader rim. No. 131, NVS, I, 2.

T.86b Fragment, as above, but with flared rim. No. 352, NVS, H, 3.

Carinated cups with stands (Fig. 135)

T.87 Fragment of a small cup with flaring sides, out projecting rim, carination at the base. No. 328, NVS, G, 3.

T.87a Similar to above, but with finger-tip decoration at the carination, possibly having a short stemmed base. No. 263, NVS, E, 3.

Carinated pots (Fig. 136)

[T. 34 and 48 occur in this category.]

T.88 Fragment of a small pot with concave sides, short concave neck and double carination, flared rim. No. 3356, NVS, C, 4.

T.88a Similar to above, but with sloping shoulders and short out-turned rim. No. 3356a, NVS, D, 5.

T.88b Half of a pot with angular concave sides, double carination, base rounded, upper part broken. No. 513, NVS, F, 6.

Cup (Fig. 136)

T.89 Almost a complete small cup with flaring sides, projecting rim, wide mouth, flat discoid base. No. 387, NVS, E, 4.

Kuṇḍās (Fig. 136)

T.90 Fragment of a thick-sided *kuṇḍā* with flared sides, flat top. No. 3330, NVS, B, 4.

T.90a Fragment of a small *kuṇḍā* with convex flaring sides. No. 2034, NVS, E, 3.

Sub-spherical pots (Fig. 137)

T.91 Fragment of a rimless sub-spherical pot with bevelled in edge, surfaces red-slipped, outer one burnished. No. 1465, NVS, D, 3.

T.91a Similar to above but with grooved and beaded edge. No. 1465a, NVS, D, 5.

Rimless bowl (Fig. 137)

T.92 Fragment of a rimless bowl with in-turned convex sides, saggering base, interior stepped. No. 201, NVS, G, 2.

Coarse Red Ware

(Figs. 137-139.)

[Types occurring: 33, 41, 44, 49, 56, 65b, 76, 80b, 81, 81b, 86a, 86b, 88, 88a.]

Rimless pot (Fig. 137)

T.93 Fragment of a rimless pot with short, raised and grooved mouth. No. 3820, NVS, D, 5.

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POTTERY OF PERIOD V

Funnel-shaped mouth (Fig. 137)

T.94 Fragment of a funnel-shaped mouth of probably a globular pot. No. 382, NVS, E, 4.

Small pots (Fig. 137)

T.95 Complete pot with long stemmed base, converging sides, rounded edge. No. 439, NVS, F, 4.

T.95a Similar to above but with a flat base. No. 2865, NVS, D, 3.

T.95b Complete pot with flat base, bulged body, straight high neck. No. 2017, NVS, C, 5.

T.95c Similar to above but neckless. No. 223, NVS, G, 2.

T.95d Similar to above, but with concave neck and out-turned rim. No. 1159, NVS, D, 4.

T.95e A complete biconical pot, convex discoid base, rope design at the carination (made by joining two pantis face to face), hand-made. No. 224, NVS, G, 2.

Spouted pots (Fig. 138)

T.96 Fragment of a globular pot with concave neck and small spout. No. 3301, NVS, B, 4.

T.96a Fragment, as above, but with a spout surrounded by an applique band. No. 348, NVS, H, 3.

Panti (Fig. 138)

T.97 Almost complete *panṭī* with flat base, hemispherical body, flat top. No. 529, NVS, G, 6.

Gourd-shaped vessel (Fig. 138)

T.98 Fragment of a gourd-shaped pot with beaded out rim. No. 2658, NVS, B, 3.

Bowl (Fig. 138)

T.99 Half of a short-walled bowl with open mouth and flat-base. No. 2238, NVS, D, 2.

Stand (Fig. 138)

T.100 Stem portion of a thick-sided stand with hollow stem and double-concave outline. No. 1326, NVS, A, 2.

Doughs (Fig. 138)

[T.15d occurs in this period also.]

T.101 Fragment of a dough with a projected lug at the rim, inner surface burnished black, outer surface roughened with sand. No. 106, NVS, T, 2.

T.101a Fragment of an open dough, shallow, thickened rim, rest as above. No. 163, NVS, I, 2.

Storage jars (Fig. 139)

T.102 Rim of a storage jar with a lug in the interior of the rim to receive a lid. No. 424, NVS, G, 4.

T.102a Fragment, rim, flat, beaded out rim. No. 1927, NVS, A, 2.

BLACK-SLIPPED BURNISHED WARE

(Figs. 139-140)

Carinated Vessels (Fig. 139)

T.103 Fragment of a carinated vessel with straight high neck, flat out-turned rim, outer surface burnished. No. 144, NVS, E, 2.

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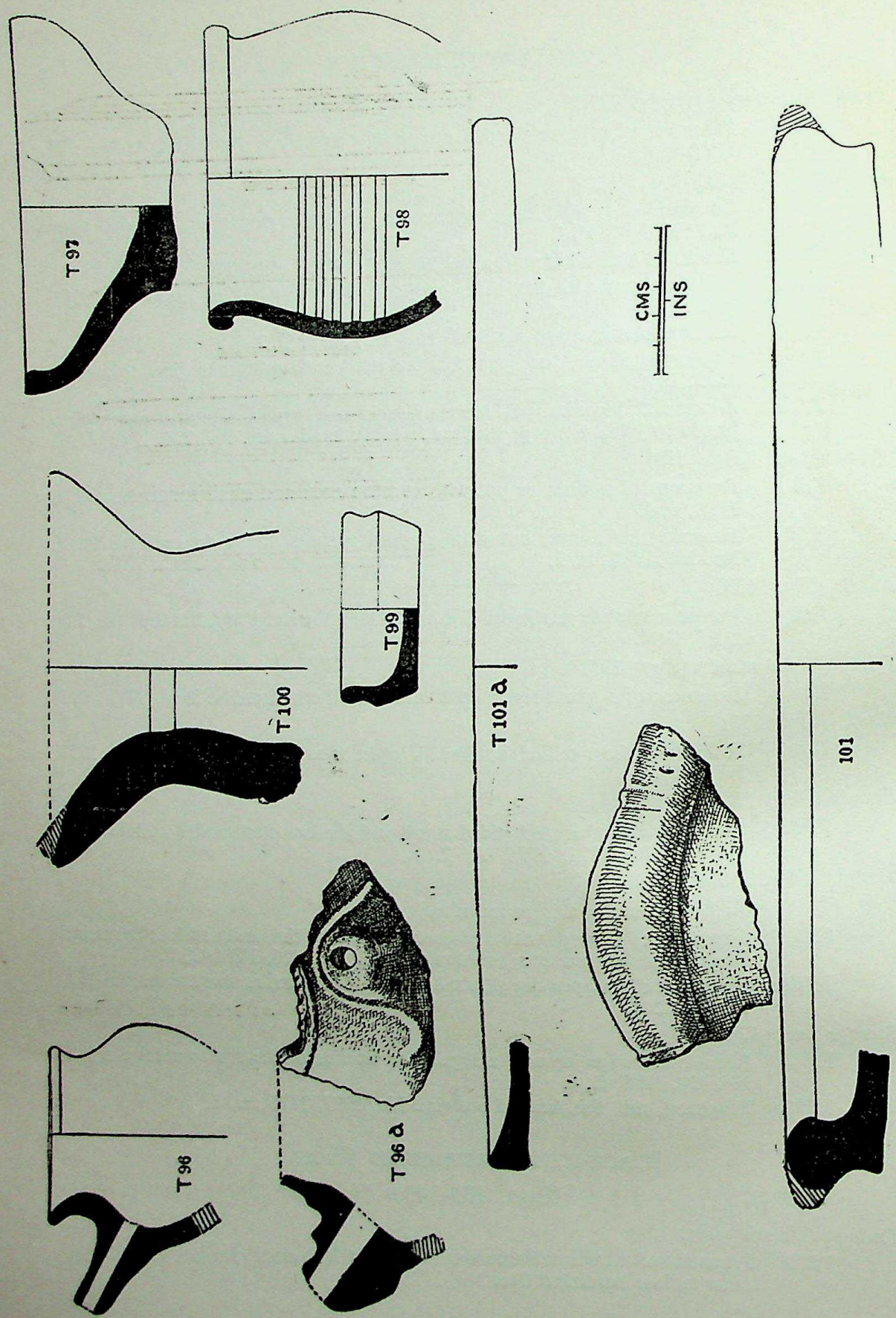

Fig. 138 : Types 96-101a. [1/2]. Coarse Red Ware : Spouted pots (96-96a), Panti (97), Gourd-shaped pot (98), Bowl (99), Stand (100), Doughs (101-101a). Period V. (See p. 301).

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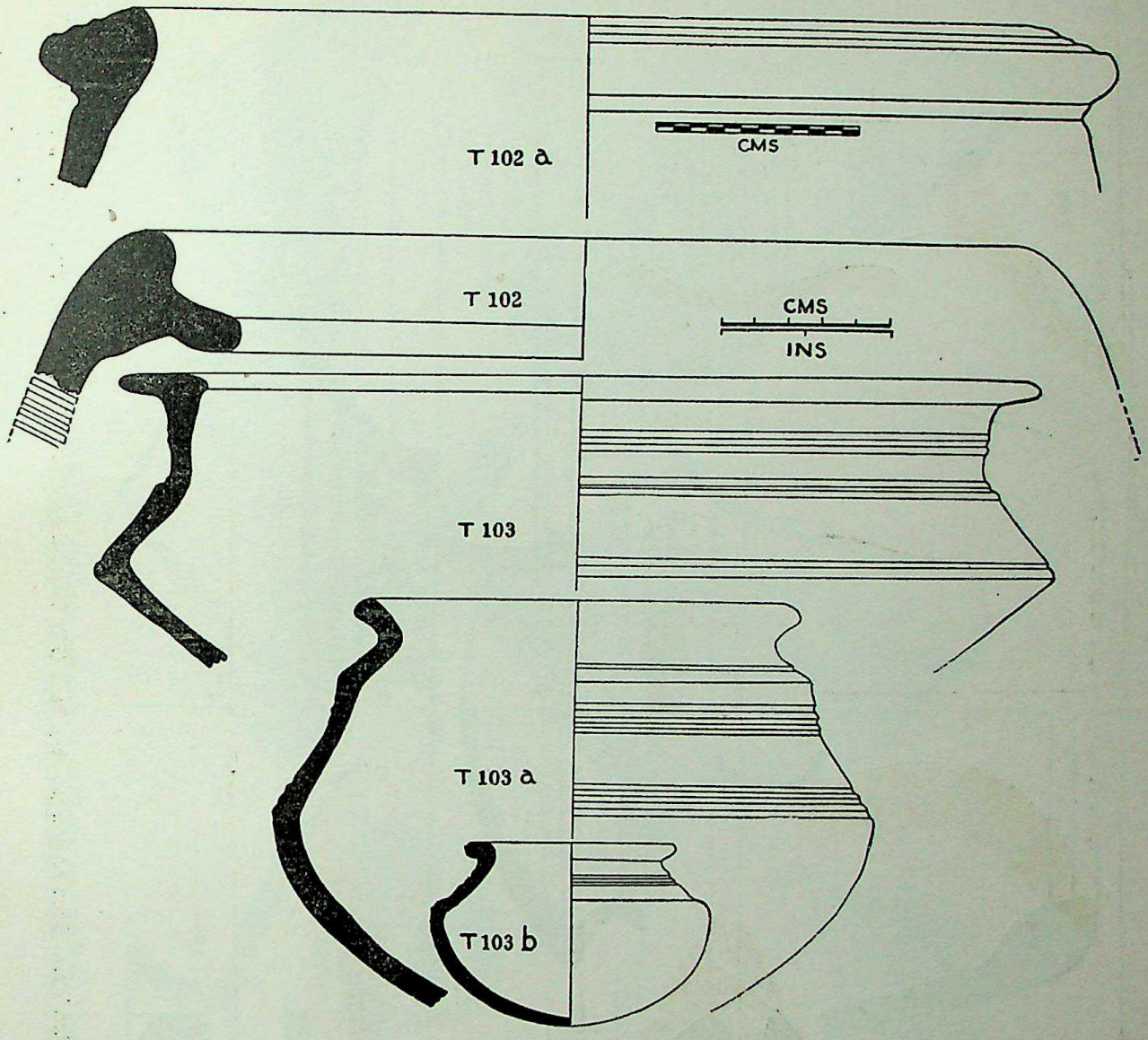

Fig. 139 : Types 102-103b [1/2]. Coarse Red Ware : Storage jars (102-102a) ; Black slipped Ware : Carinated Vessels (103-103b). Period V. (See pp. 301-302).

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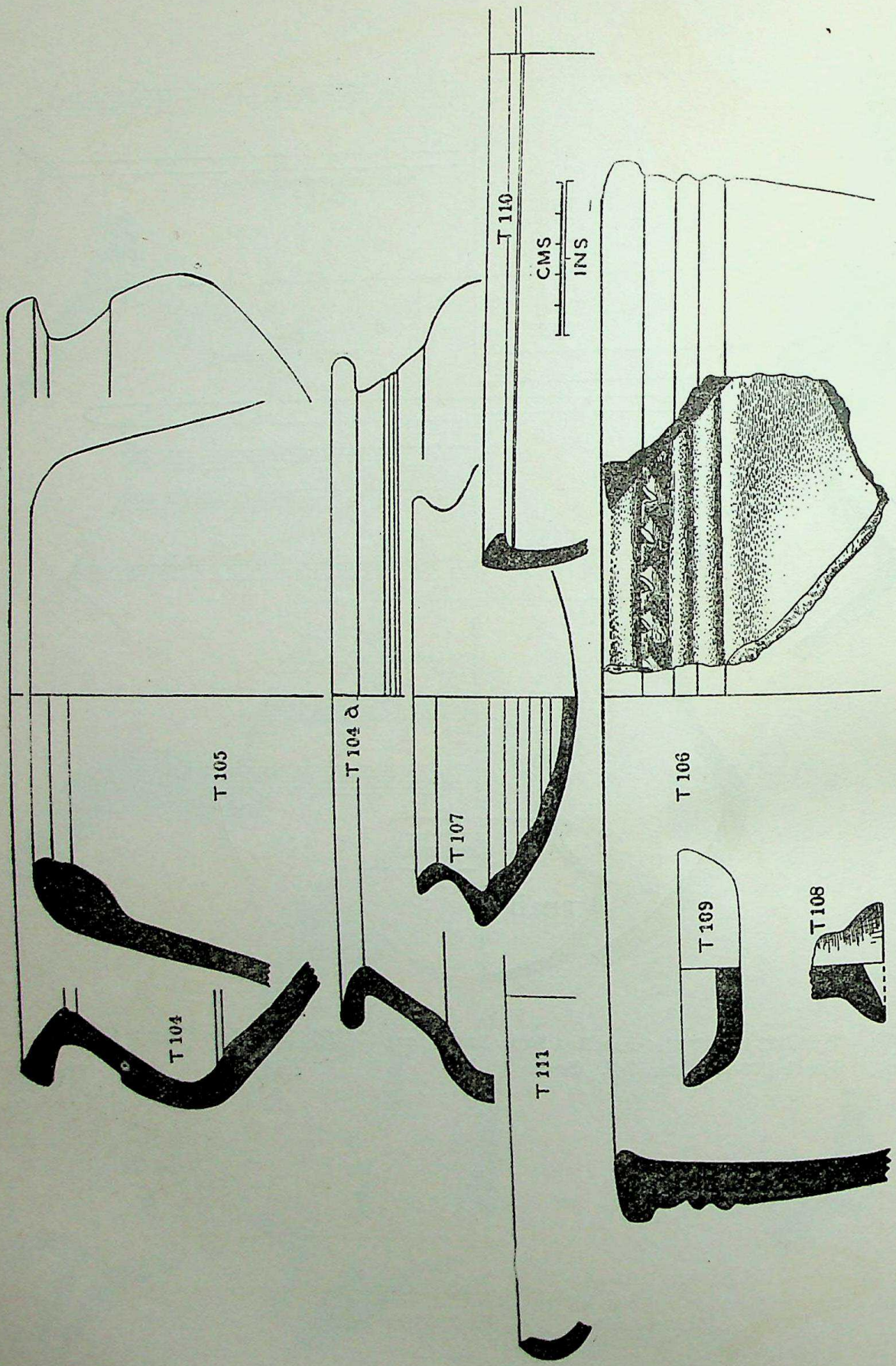

Fig. 140 : Types 104-111 [1/2]. Black-slipped : Globular pots (104-104a), Oval-shaped pot (105). Coarse Black Ware : Kuṇḍā (106), Carinated pot (107), Lid (108), Dish (109); Red-slipped NBP: Bowl (110), Dish (111). Period V. (See p. 306).

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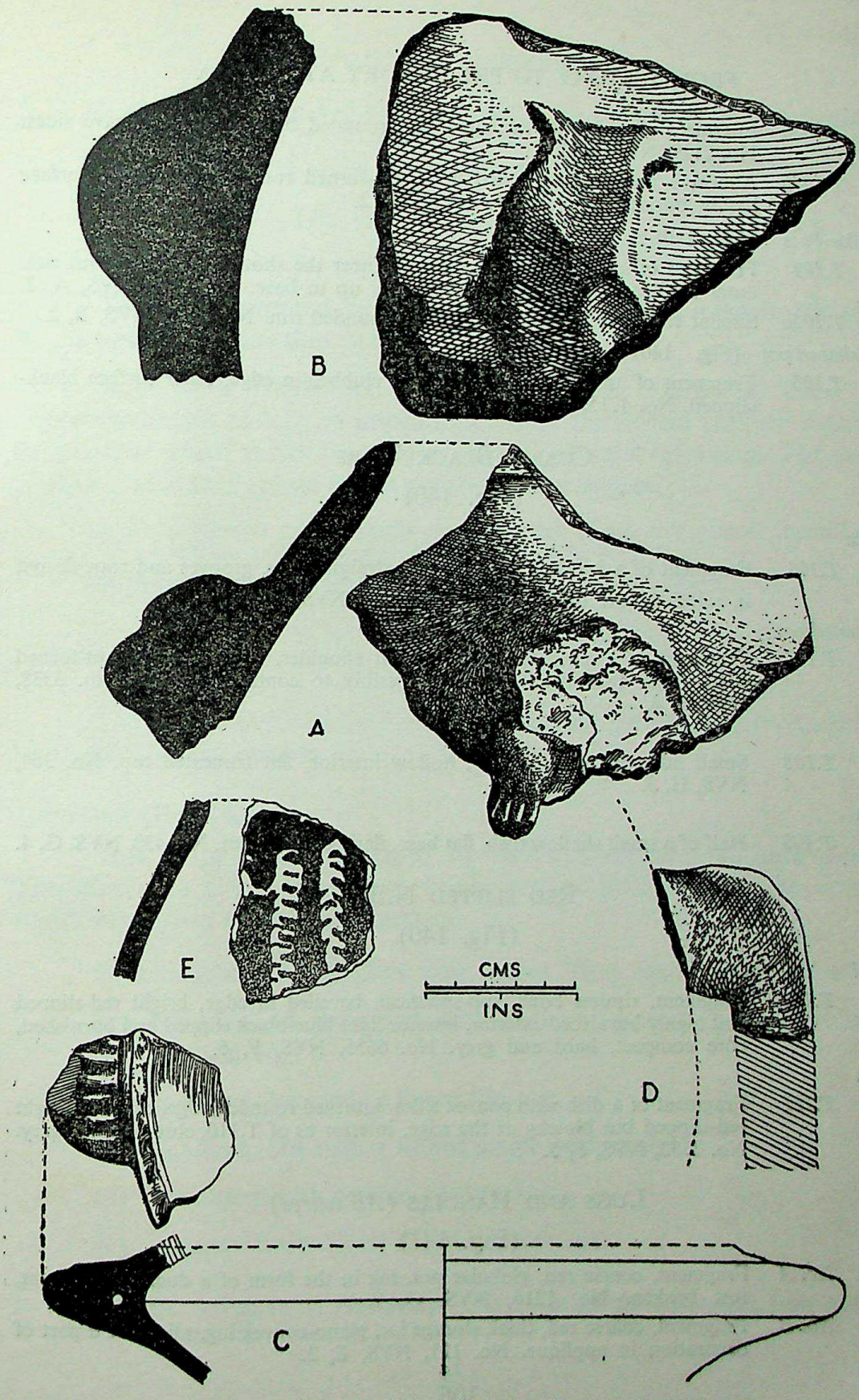

Fig. 141 : Lugs and Handles. All Wares (A-D). Painted Andhra Sherd (E). Period V. (See pp. 306-307).

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T.103a Fragment of a double carinated pot, rounded base, sloping concave sides. No. 2129, NVS, C, 2.

T.103b Almost a complete carinated bowl out-turned rounded rim, outer surface highly burnished. No. 515, NVS, D, 2.

Globular Pots (Fig. 140)

T.104 Fragment of a globular pot with bulge near the shoulder, bevelled out rim, outer surface burnished, burnished only up to base. No. 1815, NVS, A, 2.

T.104a Similar to above but with out-turned rounded rim. No. 2013, NVS, B, 2.

Oval-shaped pot (Fig. 140)

T.105 Fragment of an oval-shaped pot with clubbed-in edge, outer surface black-slipped. No. 4715, NVS, H, 4.

Coarse Black Ware

(Fig. 140)

Kundā

T.106 Fragment of a *kundā* with a flat top, straight sides, grooves and rope design in relief on the outer surface. No. 162, NVS, F, 2.

Carinated pot

T.107 Fragment of a carinated pot with flat shoulder, concave neck, out-turned edge, outer base blackened due possibly to contact with fire. No. 3338, NVS, B, 4.

Lid

T.108 Small lid, conical in outline, hollow interior, flat truncated top. No. 364, NVS, H, 3.

Dish

T.109 Half of a small shallow dish, flat base, flaring short sides. No. 430, NVS, G, 4.

Red slipped N.B.P.

(Fig. 140)

Bowl

T.110 Fragment, rimless bowl, sub-spherical, bevelled in edge, bright red-slipped and highly burnished exterior, interior light blue-black slipped and burnished, core compact, hard and grey. No. 6655, NVS, F, 6.

Dish

T.111 Fragment of a dish with convex sides, inturned rounded edge, exterior bright red-slipped but blotchy at the edge, interior as of T.110, core blackish grey. No. 3732, NVS, F, 5.

Lugs and Handles (*All wares*)

(Fig. 141)

No. A Fragment, coarse red, globular pot, lug in the form of a duck's bill extant, rest broken. No. 1216, NVS, G, 2.

No. B Fragment, coarse red, thick storage jar, plano-convex lug, might be a part of decoration in applique. No. 121, NVS, E, 2.

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No. C Fragment, black-and-red ware, bill-like lug perforated, might be a domical lid with a lug. No. 3728, NVS, H, 4.

No. D Fragment of a solid clamp-like handle with a red slip. No. 2131, NVS, C, 2.

The Painted Andhra Ware

(Fig. 141)

This is represented by two sherds which fail to indicate the shape of the vessel to which they belong.

Both show coarse red interior while the exterior is black and chocolate-brown blotchy in appearance. Over the brown slip are paintings in a colour which varies from light yellow to bright vermilion. The design is drawn with thick paste which can be felt by fingers.

No. E Fragment, comparatively medium thick sherd, salt glazed, painted with oblique rows of loops.[1] No. 1863, NVS, C, 4.

The unillustrated sherd No. 6778, NVS, F, 7 is similar to above.

The Red Polished Ware

(Figs. 142-144)

The shapes met with in this ware comprise sprinklers, bowls, dishes, cups and globular vessels.

Sprinklers (Fig. 142)

This shape was represented by necks, shoulder and base pieces. The slips were either bright red, bright tan or dark brown. The core is uniformly brown to red and compact.

Five varieties of sprinklers were found. They are as follows :—

(*a*) high necked sprinklers with a flared, convex top and single perforation,

(*b*) as above, but with a flared flat top,

(*c*) as above, but with a ringed single perforation,

(*d*) sprinklers with double perforation,

(*e*) comparatively short-necked specimens.

1. Cf. *A.I.*, No. 4, Fig. 27, T. 133; also pl. CX11, No. 5 from Brahmagiri, from a low stratum of Phase III.

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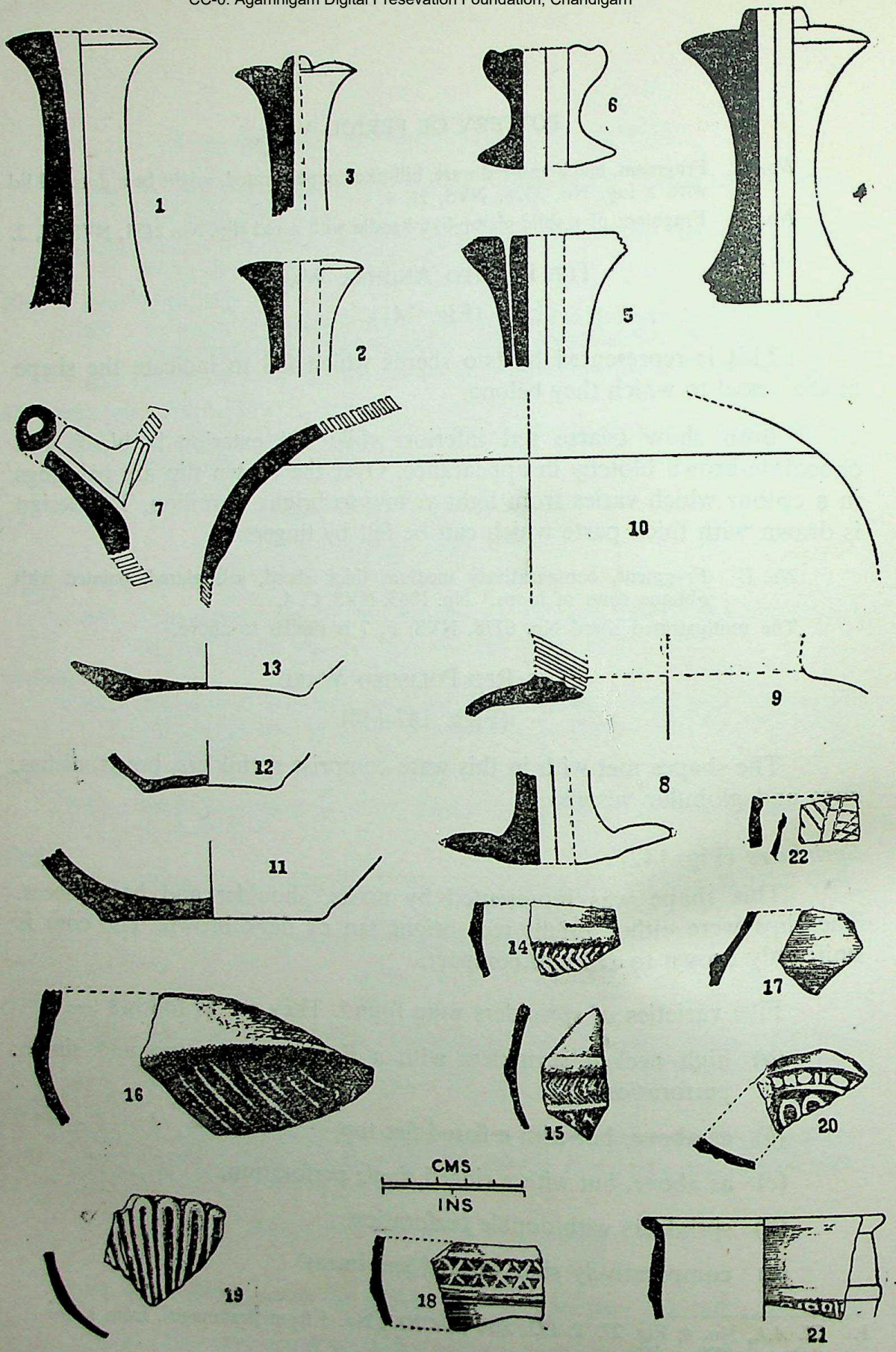

Fig. 142 : Red-polished Ware [1/2]. Spinklers (1-6), Fragments (7-10), Bases (11-13), Megarian Ware (14-22). Period V. (See pp. 310-311).

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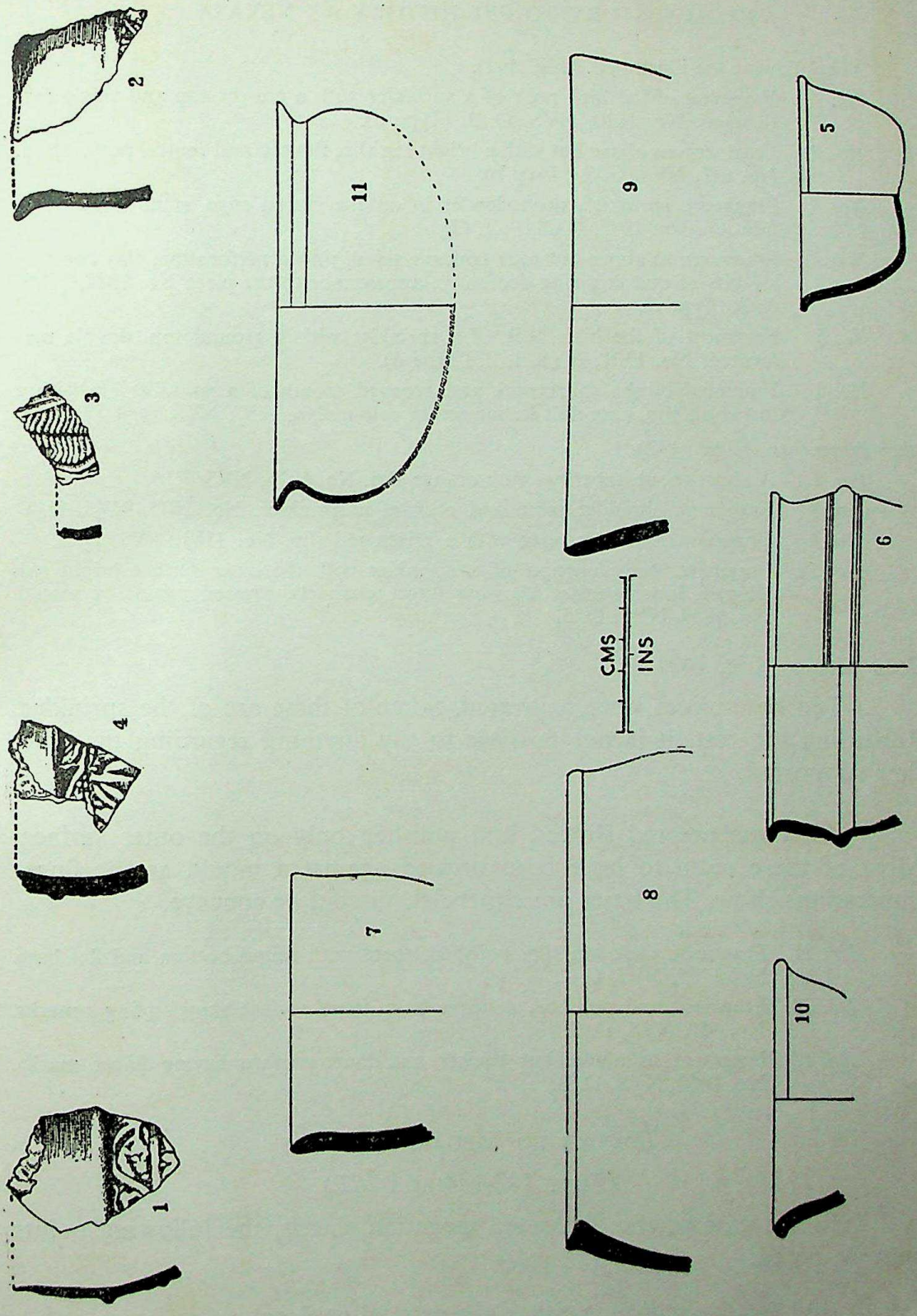

Fig. 143 : Red-polished Ware [1/2]. Decorated Sherds (1-4). Bowls and Dishes (5-11). Period V. (See pp. 311, 314).

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The following are illustrated. (Fig. 142).

No. 1 Fragment of the high neck of a sprinkler with a convex top and single perforation. No. 1610, NVS, D, 3. (Type a).

No. 2 Fragment, as above but with a bright tan slip, flat top and central perforation. No. 647, NVS, G, 2. (Type b).

No. 3 Fragment, sprinkler, neck slender in outline, flared edge, small domed perforation. No. 1847, NVS, F, 2. (Type c).

No. 4 Fragment, as above but neck concave-sided, ringed perforation, clay containing bits of quartz giving decorative appearance to the piece No. 1387, NVS, A, 3. (Type c).

No. 5 Fragment of the high neck of a sprinkler with a ground top, double perforated. No. 1301, NVS, I, 2. (Type d).

No. 6 Fragment of the short neck and grooved mouth of a sprinkler (?) with a brownish slip, core dull Indian red in colour. No. 1657, NVS, D, 4. (Type e).

Other Fragments (Fig. 142)

No. 7 A short spout, tapering, with orange slip. No. 6076, NVS, F, 6.

No. 8 Fragment, shoulder piece and neck of a sprinkler. No. 2675, NVS, H, 3

No. 9 Fragment, shoulder piece with a bright red slip. No. 1182, NVS, D, 2.

No. 10 Fragment, belly portion of a sprinkler with the outer surface bright red-slipped, inner surface showing finger channels, pressed against a mould. No. 1884, NVS, D, 5.

Base pieces (Fig. 142)

Ten base-pieces were recovered. Some of these are of the sprinkler. Regarding the rest, it is not possible to say anything regarding the body they supported.

All these are red slipped and polished only on the outer surface. Most of these seem to have been pressed against a mould as the finger impressions show. The bases are either flat, discoid or concave.

No. 11 Fragment, dark tan slip, polished, sherd with round bottom and flat base. No. 1169, NVS, G, 2.

No. 12 Fragment, red polished, concave base, inner surface showing finger marks. No. 460, NVS, D, 2.

No. 13 Fragment as above but thicker and inner surface having finger marks. No. 1464, NVS, D, 3.

Decorated Megarian sherds

(Figs. 142-144 and *151*.)

In the case of the decorated megarian sherds, the following points may be noted.

(*a*) the decoration is either geometrical or floral,

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(*b*) designs are on the outer surface only,

(*c*) designs mostly on the belly and shoulder portions,

(*d*) in most cases, both the surfaces are red-slipped,

(*e*) the designs are in low relief, some of which are pressed against a mould as the finger impressions on the inner surface show.

The following sherds with geometrical decorative patterns are illustrated: (Fig. 142)

No. 14 Fragment, red slipped surfaces, outer surface having an embossed band capping chevrons to right. No. 1562, NVS, D, 3.

No. 15 Fragment, as above but with bands enclosing chevrons to left. No. 1178, NVS, D, 2.

No. 16 Fragment, big sherd, interior showing finger marks, design of concentric arches reclining against a straight vertical band. No. 1379, NVS, A, 3.

No. 17 Fragment, a group of horizontal bands in relief. No. 3811, NVS, C, 5.

No. 18 Fragment, shoulder piece, outer surface having crosses run over by a central horizontal line. No. 5371a, NVS, F, 5. [*Fig. 151, No. 3*].

No. 19 Fragment, probably a bowl, moulded outer surface having long petal-like design in relief. No. 1218, NVS, D, 3. [*Fig. 151, No. 5*].

No. 20 Fragment, as above, but inverted and with dot and short lines at the top. No. 122, NVS, X, 2. [*Fig. 151, No. 4*].

No. 21 Fragment of a straight-sided bowl with out-turned rounded rim, a ridge in relief at the outer surface capping some design of circles and straight vertical lines. No. 5131, NVS, H, 5.

No. 22 Fragment, fine red-slipped outer surface, design not embossed but incised and consisting of vertical and slanting lines piercing through the slip. No. 1521, NVS, B, 2.

Sherds with floral design (Fig. 143)

No. 1 Fragment of probably a hemispherical bowl with both the surfaces red-slipped, outer surface having bands and creeper or scroll design in relief. No. 1872, NVS, A, 5.

No. 2 Fragment, as above, but thicker and with the edge out-turned, design probably as on No. 1872 above. No. 1862, NVS, C, 5.

No. 3 Fragment, Indian red slip on both the surfaces, outer surface having a leaf design in relief. No. 1700, NVS, D, 4.

No. 4 Fragment, as above, but thicker, design probably as above but less neat. No. 2023, NVS, C, 5.

Bowls and Dishes (Fig. 143)

No. 5 A complete specimen of a small cup-cum-bowl with flaring sides, rounded edge, concave base. No. 5286, NVS, E, 6.

No. 6 Fragment of a deep bowl with straight sides having a ridge on the outer surface, both surfaces with a bright red slip, edge flat and out-turned. No. 5110, NVS, E, 5.

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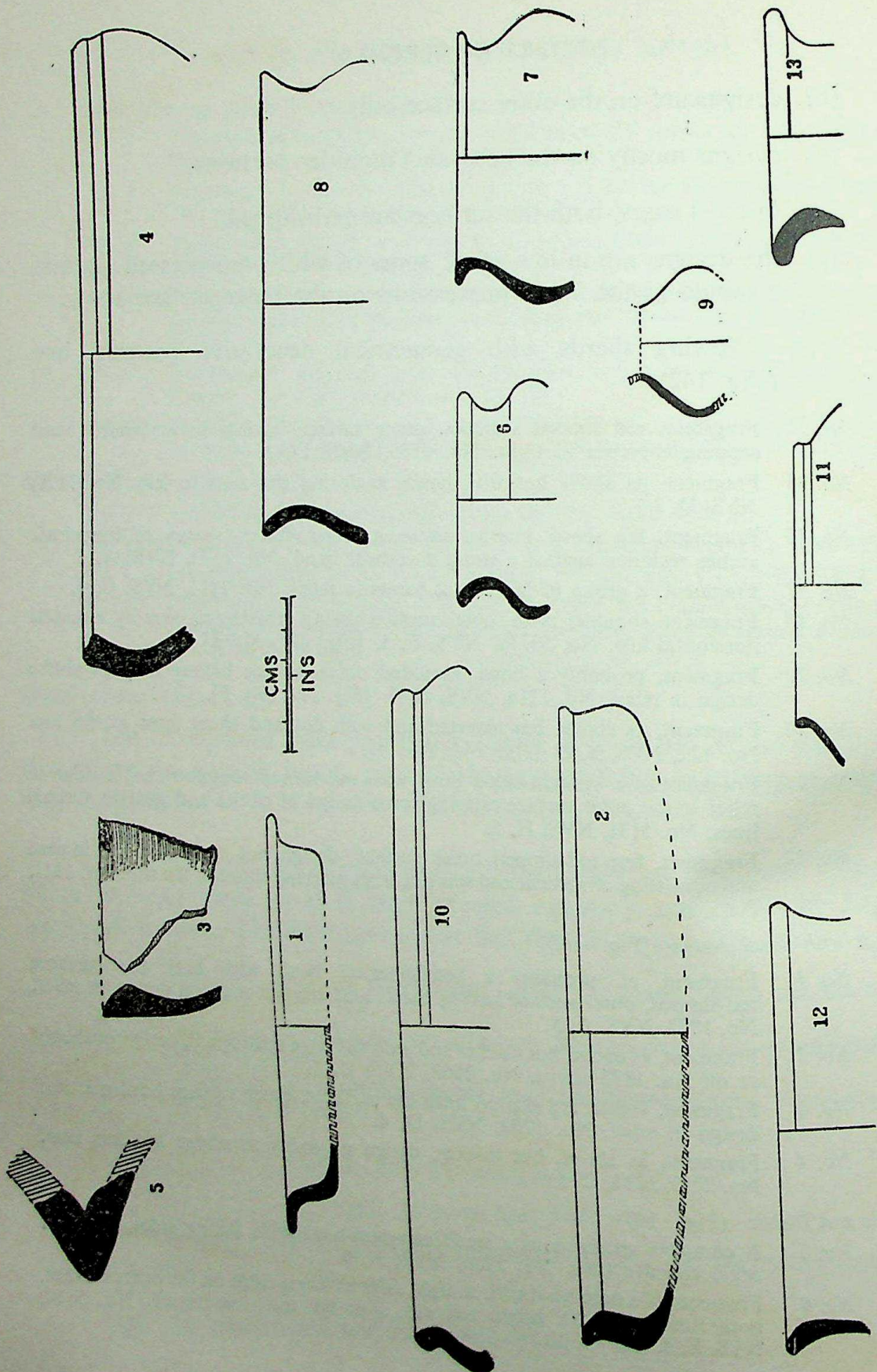

Fig. 144 : Red-polished Ware [1/2]. Dishes (1-4), Lug (5), Globular Pots (6-13). Period V. (See p. 314).

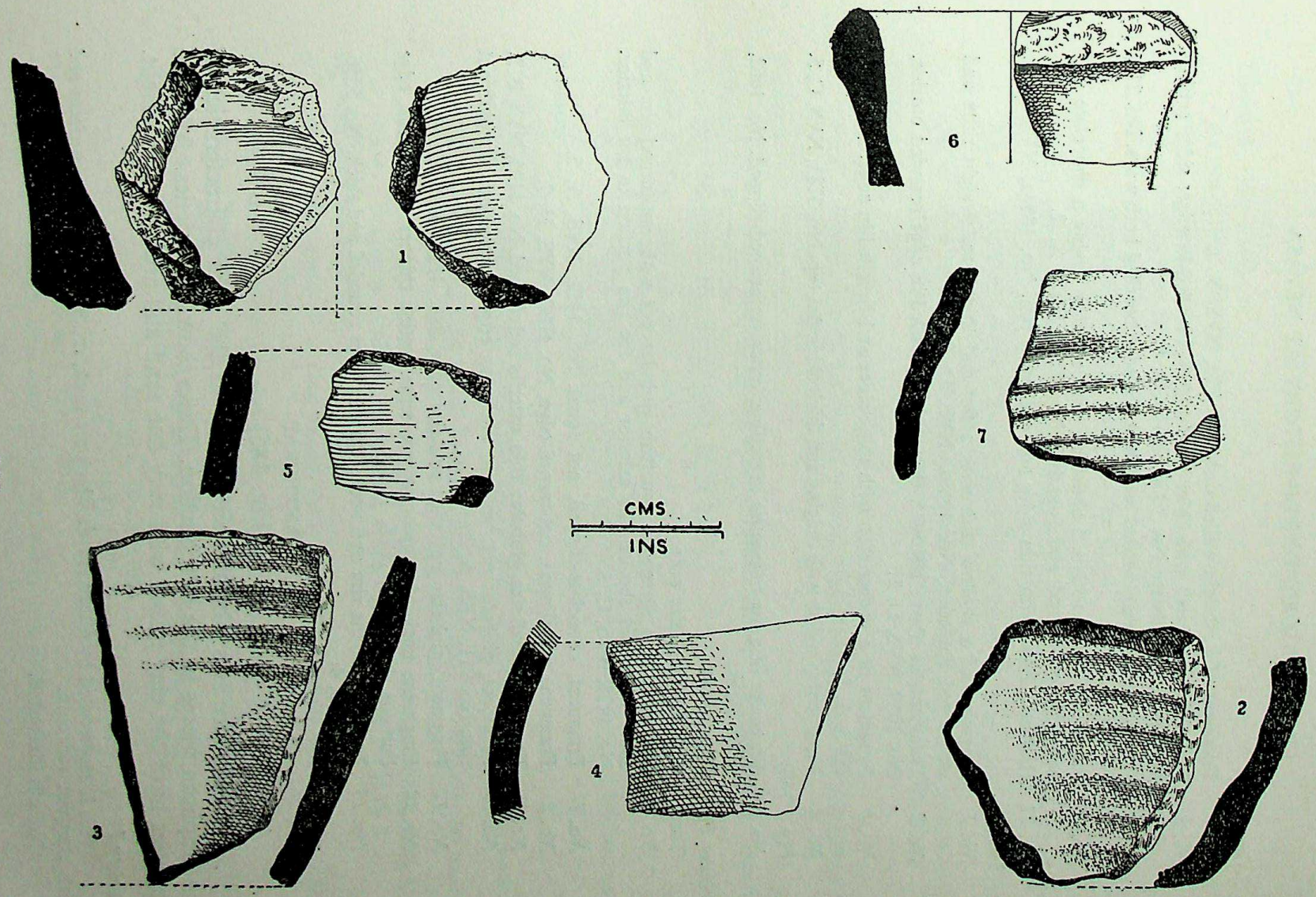

Fig. 145 : Amphora Sherds [1/2]. Period V. (See p. 315).

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Fig. 143

No. 7 Fragment of a straight-walled dish. No. 724, NVS, X, 2.

No. 8 Fragment of a bowl with thick and slightly bevelled-in edge, sides getting thinner towards base. No. 5239, NVS, G, 6.

No. 9 Fragment of a straight-sided bowl with the edge bevelled both ways. No. 272, NVS, F, 3.

No. 10 Fragment, similar to No. 5 above but with surfaces having a chocolate slip and edge out-turned and rounded. No. 5386, NVS, X, 2.

No. 11 Half of a bowl with thin sides and out-going rim. No. 1884a, NVS, D, 5.

Fig. 144

No. 1 Fragment of a shallow dish with a flat and thin base, straight sides and out-turned flat edge. No. 1059a, NVS, D, 2.

No. 2 Fragment, as above but with thick sides, bevelled-in edge rounded outside. No. 1059, NVS, D, 2.

No. 3 Fragment of a deeper dish with thick sides and bevelled-in edge. No. 1437, NVS, A, 3.

No. 4 Fragment of a dish with bulging and thick sides, flat top. No. 3781, NVS, C, 5.

Lug (Fig. 144)

No. 5 Fragment of a lug triangular in outline, outer surface red-slipped. No. 1662, NVS, A, 4.

Globular Pots (Fig. 144)

These are mostly small-size pots.

No. 6 Fragment of a somewhat squattish globular pot with out-turned rim and short neck; red slip on the exterior and the rim portion in the interior. No. 1426, NVS, C, 3.

No. 7 Fragment, chocolate-slipped, not squat. No. 1412, NVS, A, 3.

No. 8 Fragment, red-slipped, out-turned edge. No. 6080, NVS, H, 7.

No. 9 Fragment, small size, globular, thin, exterior red-slipped. No. 1195, NVS, B, 2.

No. 10 Fragment, globular pot, uniform thickness, edge bevelled out, insignificant rim. No. 711, NVS, A, 2.

No. 11 Fragment, globular pot with rounded edge. No. 4128, NVS, G, 6.

No. 12 Fragment, neck of a globular pot, sides getting thinner downwards, edge bulbous. No. 3400, NVS, F, 4.

No. 13 Fragment of the rim and neck of a pot, edge rounded and thick. No. 5556, NVS, G, 4.

AMPHORAE

(Fig. 145)

A reference has already been made to the chief characteristics of the amphora pieces in the introduction. These show six varieties. All these varieties have the clay mixed with very fine sand and are heavy in weight.

Variety 1

This is represented by fifteen sherds which are thick, reddish on both the surfaces and with compact red core.

None is illustrated.

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Variety 2 (Fig. 145)

As above but with grooved interior.

No. 1 Fragment, tapering end of an amphora. No. 1709, NVS, B, 4.

No. 2 Fragment of the tapering end of an amphora. No. 6287, NVS, G, 4.

No. 3 A big sherd possibly belly portion of an amphora, grooved interior, core compact red. No. 6287a, NVS, G, 4.

Variety 3 (Fig. 145)

Sherds with kaolin-like wash on the outer surface; rest as Varieties 1 and 2; comparatively thinner.

No. 4 Big sherd, interior having blackish sediment sticking to it, outer surface creamy. No. 1778, NVS, A, 4.

No. 5 Small sherd, core compact red with blackish specks; interior with reddish wash, outer surface with a cream-yellow slip. No. 4686, NVS, F, 2.

Variety 4 (Fig. 145)

Sherds with dull blackish wash; rest as Variety 1.

No. 6 Fragment, neck and mouth portion, rounded edge, core red and full of fine silica. No. 4425, NVS, E, 2.

Variety 5

Sherd with a thin red slip on the exterior, rest as Variety 2; slip applied by fingers as evidenced by impressions.

Not illustrated. No. 3373, NVS, H, 3.

Variety 6 (Fig. 145)

Sherds with yellowish surfaces, core rough and creamy.

No. 7 Fragment, core rough, creamy, interior showing remains of blackish sediment. No. 6056, NVS, F, 2.

HANDLES

(*a*) *solid cylindrical* (Fig. 146)

No. 1 Fragment, solid cylindrical handle piece, possibly clamp-like in outline. No. 1761, NVS, C, 2.

No. 2 Fragment, solid handle with the piece of the body of the amphora, kaolin-like slip applied by fingers. No. 1619, NVS, D, 3.

No. 3 Fragment, solid cylindrical handle, with kaolin-like wash. No. 3342, NVS, F, 4.

No. 4 Fragment, as above, but tapering at one end. No. 1104a, NVS, D, 5.

(*b*) *with plano-convex section* (Fig. 146)

No. 5 Fragment of a long handle piece with plano-convex section. No. 2803, NVS, D, 3.

(*c*) *grooved handles with oval or plano-convex section* (Fig. 146)

No. 6 Small piece, short handle, oval section, two grooves on the exterior. No. 1614, NVS, D, 3.

No. 7 Longer piece, grooved internally. No. 1575, NVS, C, 3.

DECORATED SHERDS
(Figs. 147-149)

(*a*) *Sherds with punctured designs* (Fig. 147)

No. 1 Fragment, slant rows of punctured dots. No. 3248, NVS, B, 4

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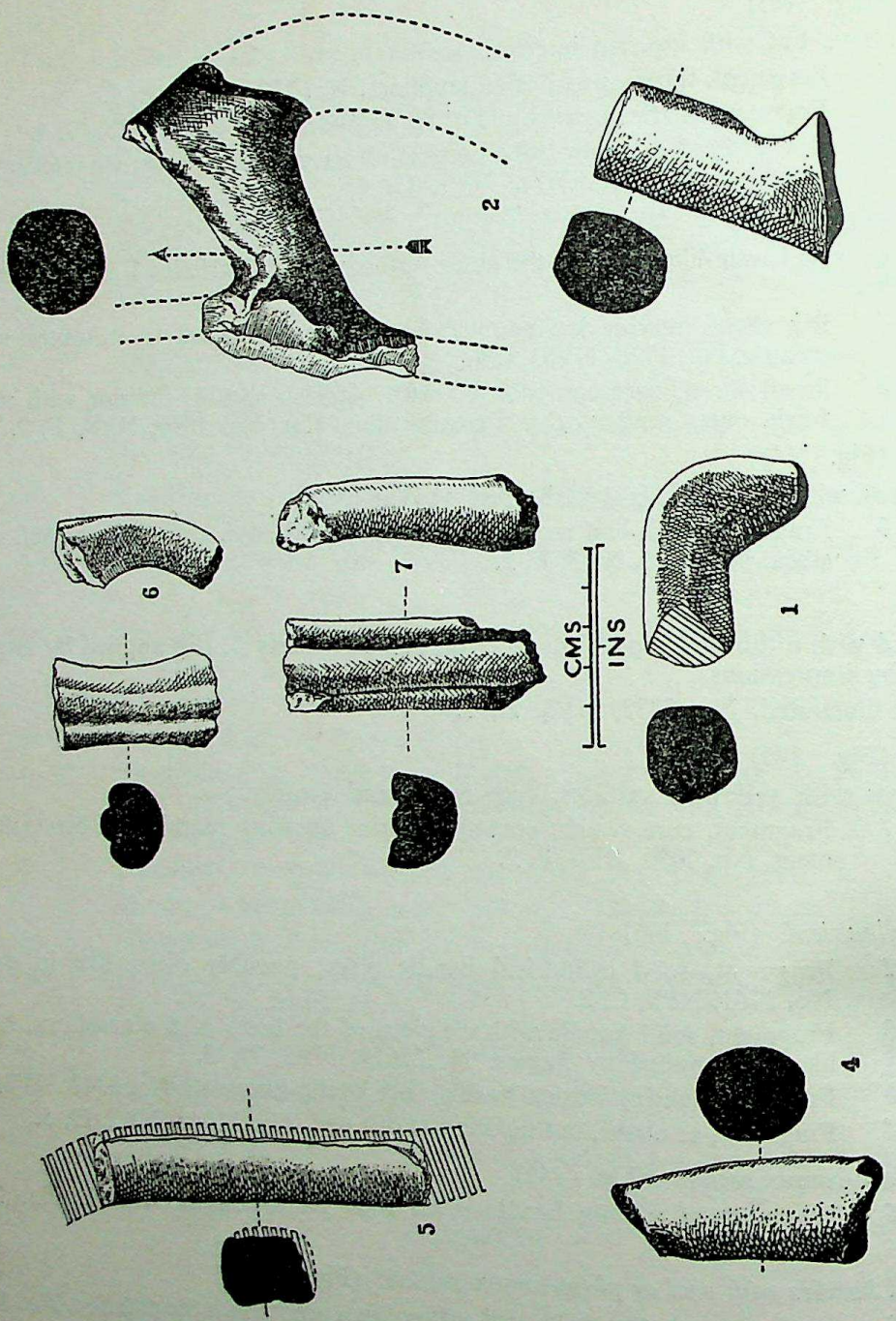

Fig. 146 : Amphora [3/4]. Handle pieces (1-7), Period V. (See p. 315).

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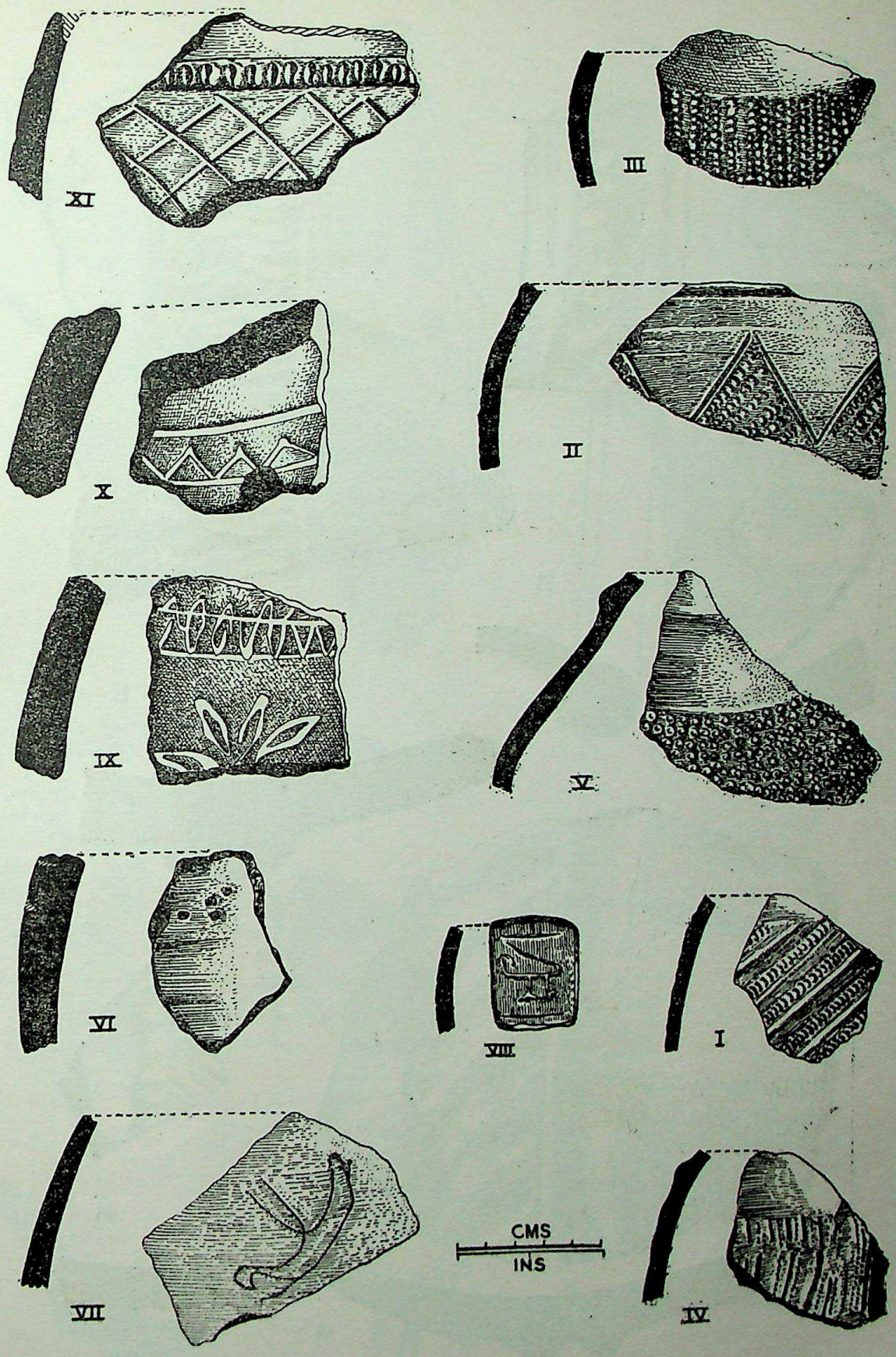

Fig. 147 : Decorated Sherds [1/2]. Punctured design (I-VI), Graffiti (VII-VIII), Incised (IX-XI). Period V. (See pp. 315, 322).

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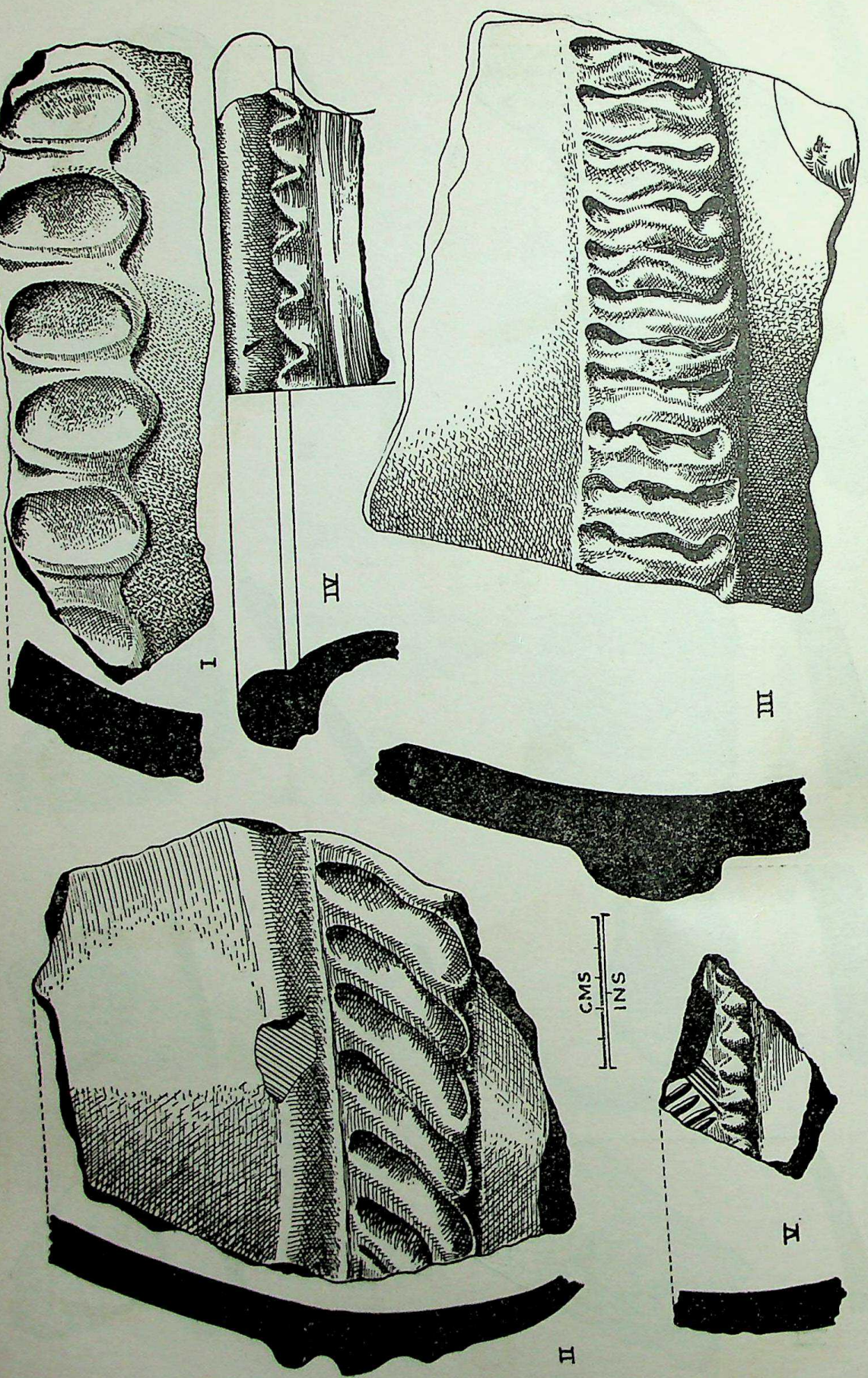

Fig. 148 : Applique Decoration [1/2]. Period V. (See p. 321).

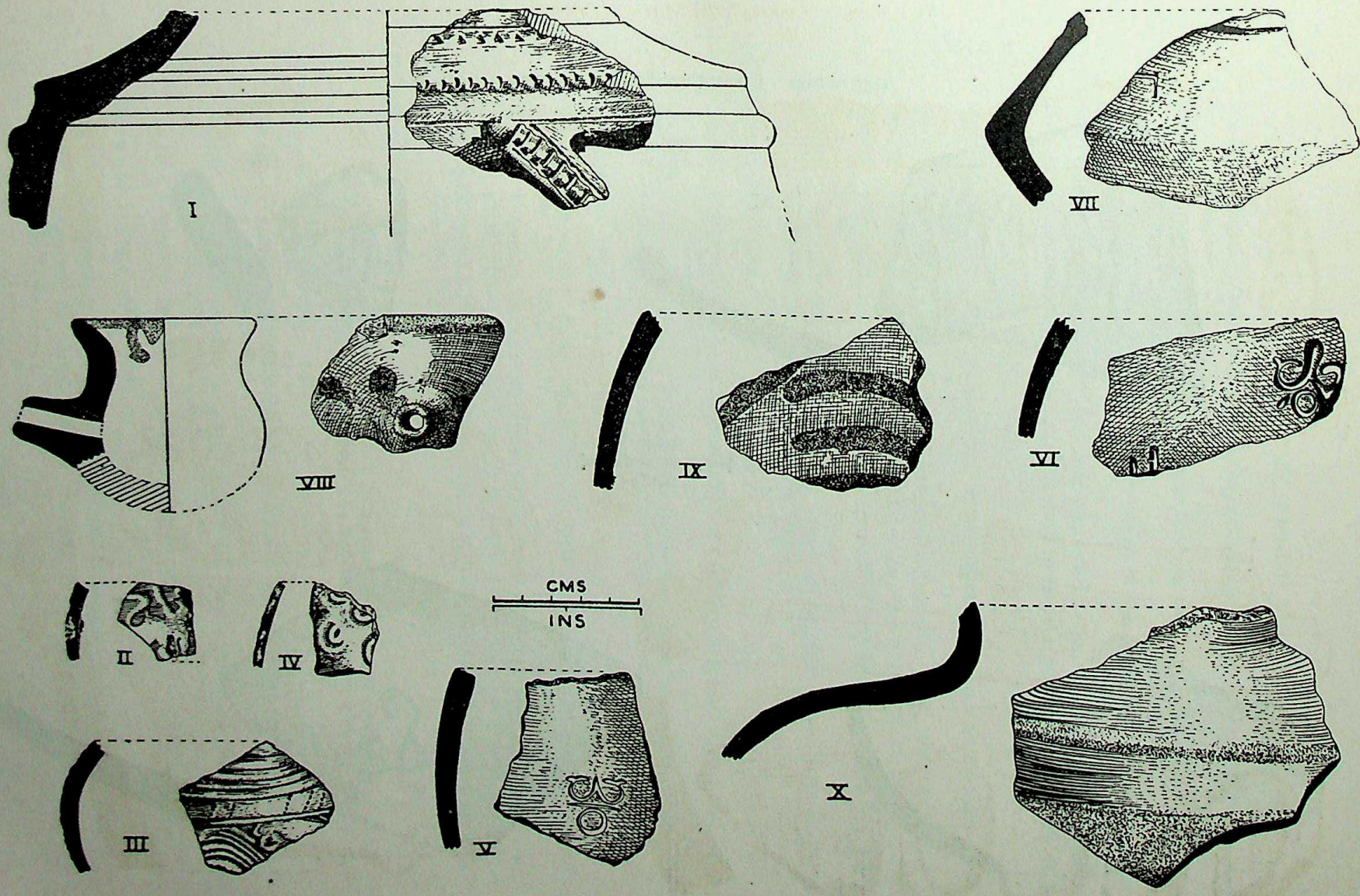

Fig. 149 : Decorated Sherds (1/2). Cut decoration (I), Embossed (II-IV), Sherds with symbols (V-VII); Painted Sherds (VIII-IX); Bi-slipped (X). Period V. (See pp. 321-322).

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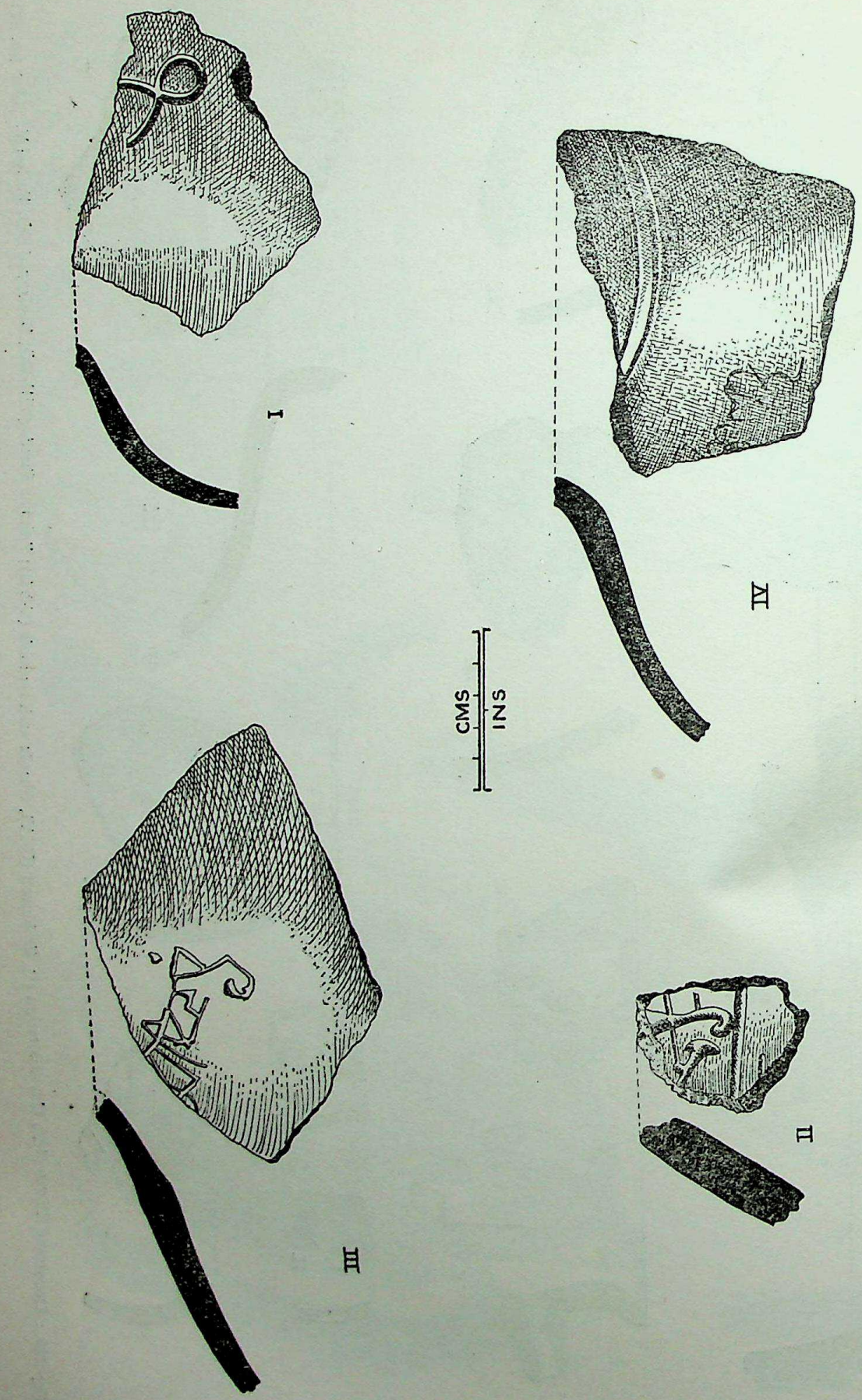

Fig. 150 : Inscribed Sherds [1/2]. Period V. (See p. 322).

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No.II Fragment, red-slipped sherd, incised triangles filled up with punctured dots. No. 436, NVS, H, 4.

No.III Fragment, red-slipped, unslipped portion with vertical rows of punctured dots. No. 1141, NVS, D, 4.

No.IV Fragment, as above, but with a design of dots punctured with a fine point. No. 248, NVS, E, 3.

No.V Fragment, coarse red, design of punctured circles. No. 431, NVS, G, 4.

No.VI Fragment, thick coarse red, four small rectangular holes. No. 214, NVS, G, 2.

(*b*) *Design on applique bands* (Fig. 148)

No.I Fragment, thick storage jar, thumb-impressed design on applique band. No. 2767, NVS, C, 3.

No.II Fragment, as above, finger-impressed design. No. 2248, NVS, D, 2.

No.III Fragment, as above, finger-tip decoration. No. 225, NVS, H, 2.

No.IV Fragment, rim beaded out, wavy line out of applique band. No. 370, NVS, E, 4.

No.V Fragment, thick sherd, finger-tip design on applique band, above it groups of oblique incised lines. No. 589, NVS, F, 7.

(*c*) *Graffiti* (Fig. 147)

No.VII Fragment, tan wash, incised Brāhmī '*ya*'-like letter, or a boat with mast. No. 3977, NVS, A, 6.

No.VIII Black-and-red sherd ground to a rectangular shape, outer surface with bird figure in a rectangular margin, amulet? No. 6290, NVS, I, 2.

(*d*) *Incised designs* (Fig. 147)

No.XI Fragment, coarse red, design of lattice capped by bi-convex incisions. No. 3543, NVS, H, 3.

No.IX Fragment, thick sherd, chocolate slip, shallow incised design of a flower with petals, above it a zigzag run over by two horizontal lines. No. 4359, NVS, H, 4.

No.X Fragment, thick, red-slipped, zigzag bounded by two lines, filled with lime. No. 250, NVS, E, 3.

(*e*) *Cut decoration* (Fig. 149)

No.I Fragment, carinated vessel, red slipped, cut-triangle decoration, sides of the triangle with incised decoration, knobs at the apex. No. 536, NVS, G, 6.

(*f*) *Embossed decoration* (Fig. 149)

No.II Fragment, chocolate-slipped, embossed animal figure with upraised tail. No. 536a, NVS, F, 4.

No.III Fragment, coarse red sherd of globular vessel, embossed bands and wavy lines. No. 1936, NVS, B, 4.

No.IV Fragment, red-slipped sherd, spirals in relief. No. 1627, NVS, H, 2.

(*g*) *Sherds with symbols* (Fig. 149)

No.V Fragment, red-slipped, sharply stamped *triratna* symbol. No. 6913, NVS, H, 6.

No.VI Fragment, as above, *triratna* stamped with a blunted stamp. No. 414, NVS, F, 4.

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No.VII Fragment, tan-slipped, carinated vessel, sharply incised *svastika* with angular arms. No. 1035, NVS, D, 3.

PAINTED SHERDS
(Fig. 149)

No.VIII Fragment of a small pot with a short tapering spout, lime-coated on both the surfaces, red ochre strokes on lime; painted with finger. No. 126, NVS, E, 2.

No.IX Fragment, coarse red ware, deep red ochre bands. No. 192, NVS, F, 2.

BI-SLIPPED SHERD
(Fig. 149)

No.X Fragment, globular pot, partially red-slipped, below it surfaces roughened due to fine sand. No. 412, NVS, F, 4.

INSCRIBED SHERDS
(Fig. 150)

This group is represented by four sherds all of a thick fabric (varying between 15 mm. and 8 mm.) with the outer surface having a red slip.

No. 3158 coming from layer 4 of Tr. C, is a fragment of the belly portion of a globular pot. The outer surface has a deeply incised Brāhmī '*ma*'-like letter. It might be noted here that the *ma*-like incision forms a pattern for design as well. Since the sherd is fragmentary, it is not known whether there were other letters after '*ma*'. (Fig. 150, No. I).

No. 256, NVS, D, 3 (No. II) is also similar to above but thicker and has a deep crimson red slip on the outer surface. The letter which consists of a thick (4 mm.) vertical incision can be identified as '*ra*' in Brāhmī. The sherd is too fragmentary and contains no other letters.

The third sherd (No. 2595, NVS, D, 2) is a bigger one and belongs to a globular pot whose outer surface was red slipped. The letters which penetrate the thick slip, seem to have been written in an inverted manner when compared to the shape of the pot. These are written with a sharp point two mm. thick and can be read as follows (No. III).

vi da e la ...

These fail to make any sense. Their angularity is marked on the basis of which the palaeography and the sherd can be assigned to 2nd/3rd century A.D.

Sherd No. 2119, NVS, D, 2, (No. IV) is similar to above in shape and fabric. In this case also, the letters are not clear, and those that are decipherable fail to make any sense. These are, however, incised with a very thin (1 mm.) and sharp point. The legend is as follows:

ti sa ra ya (?)

The letters which are a bit blurred and obliterated by straw marks cannot satisfactorily be deciphered. They are written inverted.

POTTERY OF PERIOD VI

The amount of pottery met with in the topmost layers was relatively much less than that in Period V. Further, the pottery as a whole suffers

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from a definite degeneration not only in fabric and surface treatment but also in shapes. Save the introduction of the glazed and celadon wares, the rest of the pottery is coarser in fabric.

The Red Ware

The red ware was on the whole much more than the black. In the former, a division could be marked as some sherds were with a red slip, some with a mere wash, while a majority was without any surface treatment.

The sherds bearing a red slip were few. The slip was also thin and not uniformly applied. The core contained lot of degraissant such as fine sand and straw pieces. Medium size storage pots were a peculiarity of this period. Several of the forms from Period V continue in this period also.

Vessels with a light red ochre wash were more abundant than the former. The most notable shape in this variety is the globular pot with a short stumpy spout. This is a distinct shape of the Muslim-Maratha period (VI) which occurs in a fair abundance. Besides this, however, other shapes such as covers and lids and spoutless globular pots also are available in this variety.

The coarse red ware is the most abundant amongst the three varieties. Shapes are strictly utilitarian, such as dough-plates, basins, lids, small globular pots.

There is yet another variety. This has the outer surface which bears a thick coating of reddish slip which makes the surface smooth. It is not burnished and hence appears dull red. Some specimens have quartz-grains added to the coating which gives a decorative effect to the outer surface. So far only two shapes—a globular and a carinated vessel—have been noticed in this sub-group.

The Black Ware

The black ware is relatively less than the red ware. The coarse variety is more abundant and the surfaces are drab black and core gritty and black. It gives commonplace shapes and deserves no further elucidation.

The Decorated Sherds

The period under study, yielded a number of sherds depicting a variety of decorative patterns executed by incision, applique and embossing.

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However, most of these also occur in the preceding period. The most patent mode of decoration of this period seems to have been to treat the outer surface of a pot with a light lime wash over which thick and crude linear paintings were executed.

Glazed Ware

Three distinct fabrics in the glazed ware have been detected. Apart from the varieties in the fabric—the details of which follow—the antiquity of the art of glazing has been pushed to pre-Muslim period at Nevasa as at Maheshwar.[1]

Celadon Ware

This ware was represented by twelve fragmentary sherds. Most of these were restricted to the topmost layer but a few came from the topmost layer of Period V.

These sherds, the designs on which are executed either in olive green or blue colour, do not show any variety of decoration. The shape represented is a dish with a ringed base.

POTTERY OF PERIOD VI

Types occurring in this Period:

Ware with red wash: 24, 30, 55, 80b, 81, 81a, 81b, 83b, 109.
Red slipped: 26, 55, 69d, 75, 75a, 77, 80b, 81a, 104, 107.
Coarse red: 15b, 49, 65, 65a, 69d, 76, 80f, 84a, 95b.
Burnished Black: 15b, 15d, 70, 75, 80a, 103a, 104.
Tan slipped: 70.
Coarse black: 24, 63a, 69a, 84.

RED-SLIPPED WARE
(Fig. 152)

Storage Jars

T.112 Fragment of a storage jar with flat top, short neck. No. 1453, NVS, B, 1a.

T.112a Fragment of a storage pot with out-turned flattened rim, grooved neck, exterior red slipped. No. 125, NVS, A, 1.

WARE WITH A RED WASH
(Fig. 152)

Spouted pot

T.113 Half of a spouted pot, biconical in outline, flat base, short spout. No. 59, NVS, A, 1.

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1. SANKALIA, H. D., SUBBARAO, B., and DEO, S. B., *op. cit.* p. 168.

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Sherds with antelope painting (1-2). Period III. *(See p. 244.)*

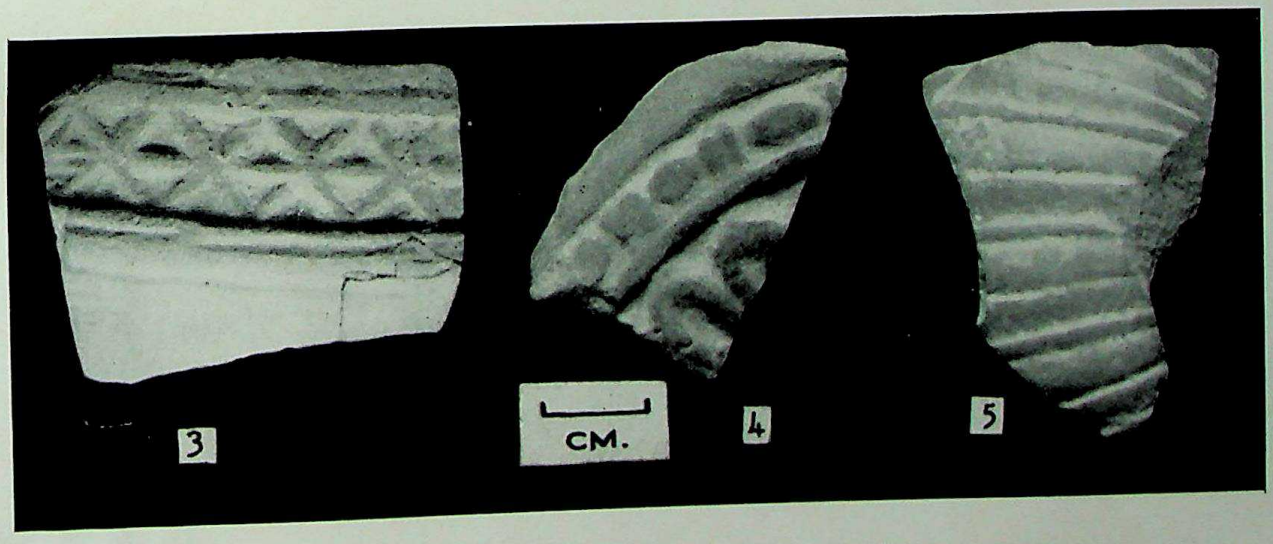

Fig. 151. Megarian Sherds (3-5). Period V. *(See p. 311).*

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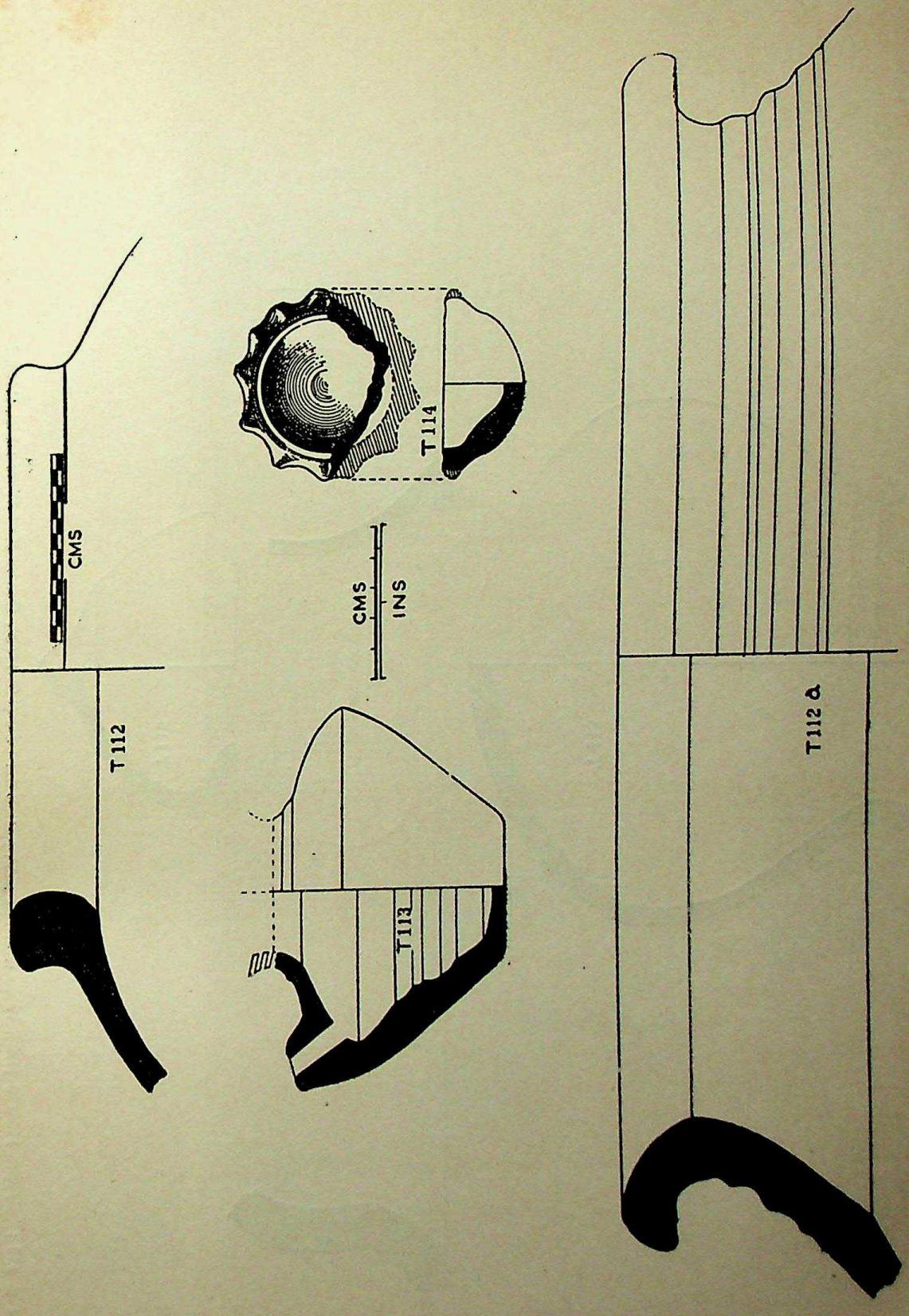

Fig. 152 : Types 112-114 [1/2]. Red-slipped ware : Storage jars (112-112a). Ware with a red Wash : Spouted pot (113), Cover (114). Period VI. (See pp. 324, 332).

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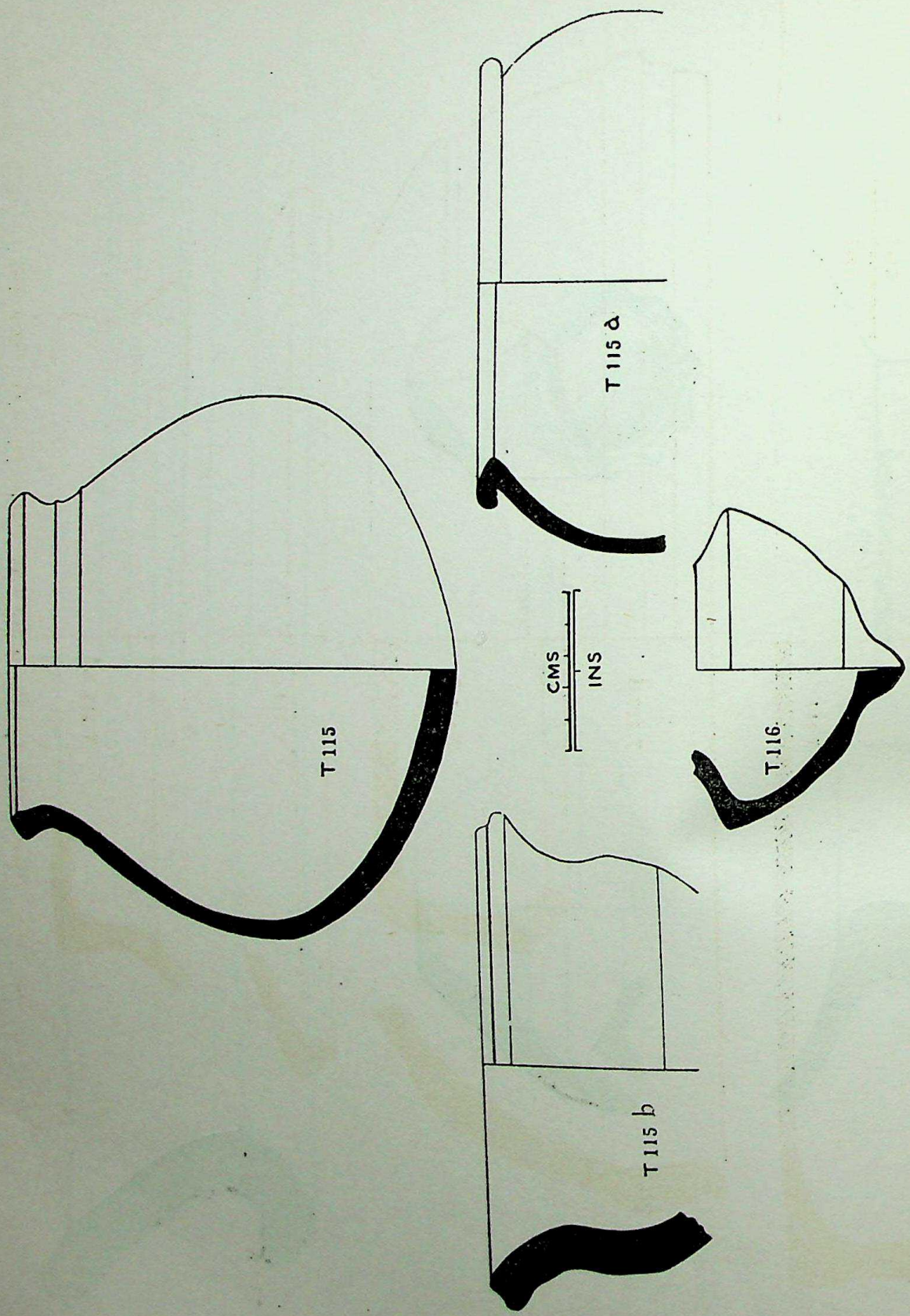

Fig. 153 : Types 115-116 [1/2]. Ware with red wash : Globular pots (115-115b). Coarse Red Ware : Lid (116). Period VI. (See p. 332).

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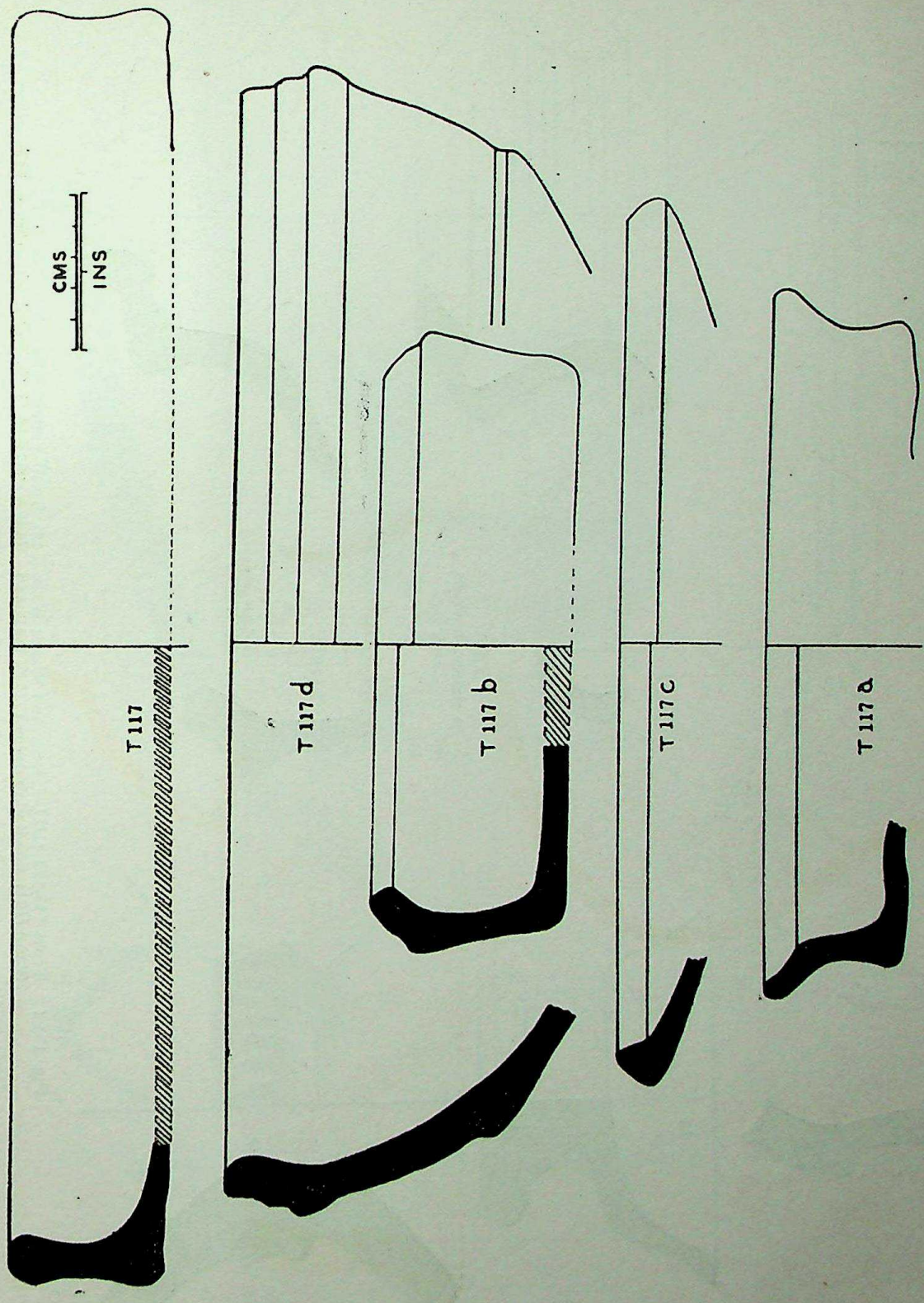

Fig. 154 : Types 117-117d [1/2]. Coarse Red Ware : Doughs. Period VI. (See p. 332).

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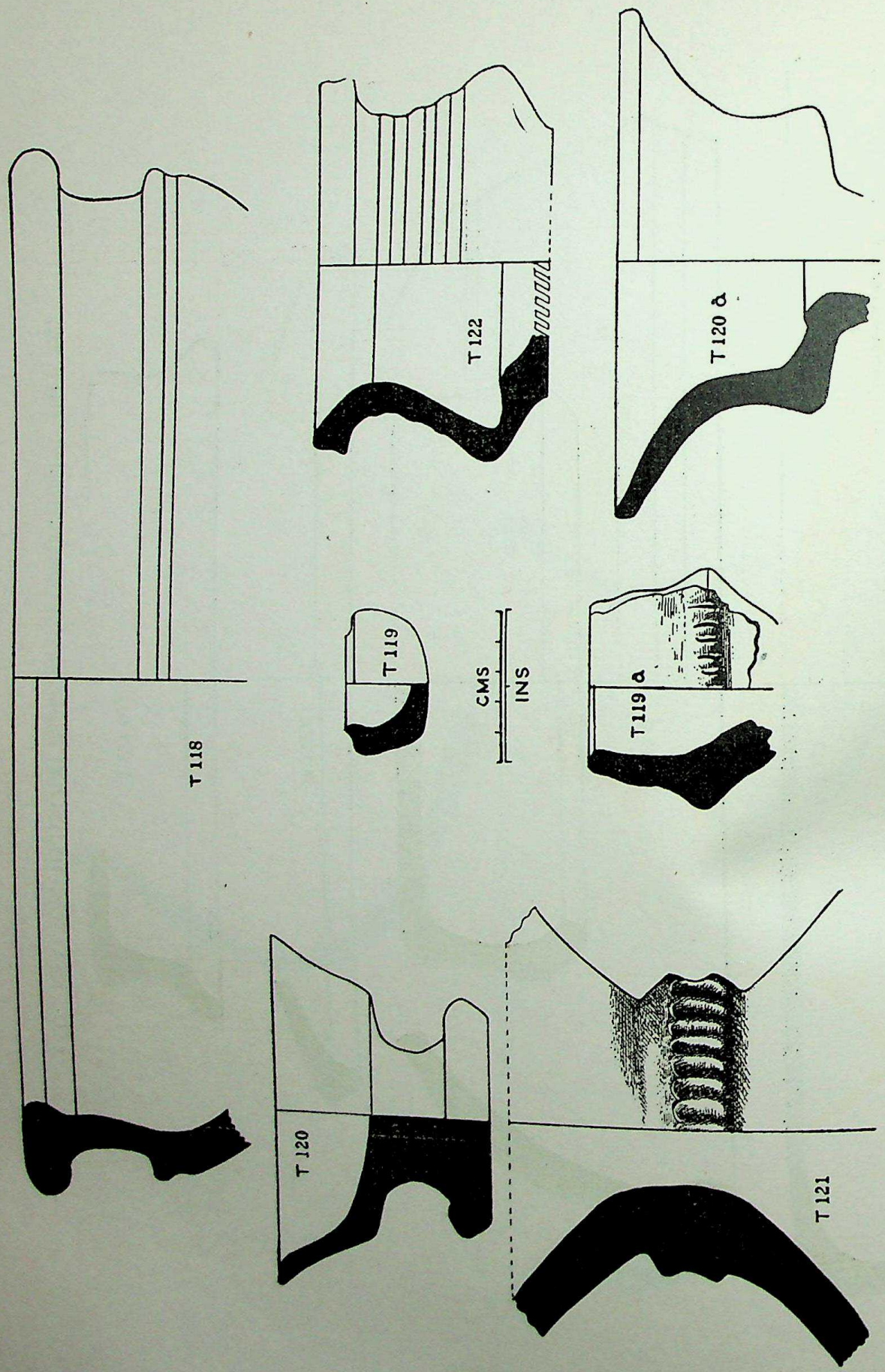

Fig. 155 : Types 118-122 [1/2]. Coarse Red Ware : Basin (118), Small Vessels (119-119a), Chalice (120), Stand (121), Squat globular pot (122). Period VI. (See p. 332).

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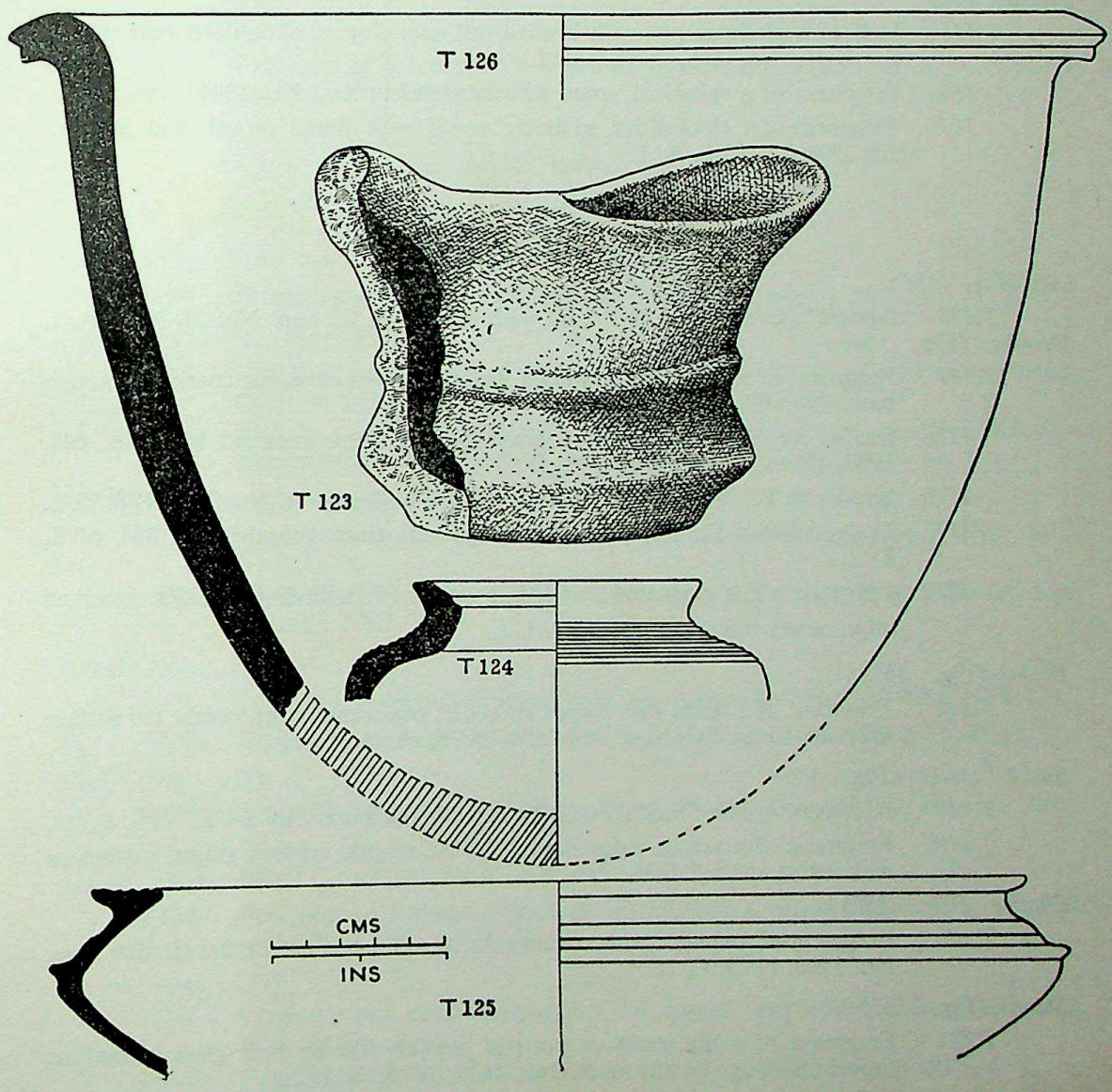

Fig. 156 : Types 123-126 [1/2]. Coarse Red Ware : Carinated vessel (123). Smoothened Red Ware : Globular Vessel (124), Carinated Vessel (125). Coarse Black Ware : Kundá (126). Period VI. (See pp. 332-333).

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Cover

T.114 Fragment of a small cover, domical roof, pinched at the outline. No. 2233, NVS, D, 1.

Globular Pots

T.115 Half of a globular pot with beaded out rim, sloping shoulders, bulged near the base. No. 116, NVS, A, I.

115a Fragment of a spherical vessel with beaded out rim. No. 1345, NVS, B, 1a.

115b Fragment of a thick-sided globular vessel with flared mouth and grooved rim. No. 22, NVS, A, 1.

Coarse Red Ware
(Figs. 153-156)

Lid (Fig. 153)

T.116 Almost a complete domical lid with a knob at the top. No. 54, NVS, A, 1,

Doughs (Fig. 154)

T.117 Fragment of a dough with straight walls, rounded edge, flat coarse and rough base. No. 52, NVS, F, 1a.

117a Similar to above but with concave flaring sides, rounded top. No. 648, NVS, D, 1a.

117b Similar to T.117 but with inturned top and higher walls. No. 905, NVS, D, 1.

117c Fragment of a shallow plate-like dough with thickened edge. No. 884, NVS, D, 1.

117d Fragment of a carinated *kundā*-like vessel (?) with flaring sides, inturned edge, sandy base. No. 33, NVS. I, 1.

Basin (Fig. 155)

T.118 Fragment of a basin with ridged shoulder, out-turned edge, coarse red surface lime-coated at the base. No. 124, NVS, A, 1.

Small Vessels (Fig. 155)

T.119 A complete, hand-made, small bowl with flat base. No. 1475, NVS, C, 1a.

119a Fragment of a vessel, sides sloping to the mouth, rimless, ridged carination with short incised lines. No. 876, NVS, A, 1a.

Chalice (Fig. 155)

T.120 Fragment of a chalice with concave flared sides, short stem, flat circular base. No. 1466, NVS, C, 1a.

Stand (Fig. 155)

T.121 Fragment of a big stand or pot-rest possibly like an hour-glass in outline, finger tip design at the stem. No. 1439, NVS, B, 1a.

Squat globular pot (Fig. 155)

T.122 Almost complete pot with grooved sloping shoulders, flat edge painted with red ochre, bottom thin and cut off while removing from the wheel. No. 300, NVS, A, 1.

Carinated Vessel (Fig. 156)

T.123 Almost a complete vessel with carination near the flat base, ridged band around the concave sides, to right near the mouth a solid projection probably part of a handle, lime coated all over. No. 3933, NVS, F, 1a.

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POTTERY OF PERIOD VI

SMOOTHENED RED WARE (Fig. 156)

Globular Vessel

T.124 Fragment of a globular pot with grooved shoulder, bulged at the shoulder. No. 103, NVS, H, 1a.

Carinated Vessel

T.125 Fragment of a vessel with ridged carination, grooved shoulder, grooved and flat rim. No. 538, NVS, C, 1.

COARSE BLACK WARE
(Figs. 156, 157)

Kuṇḍā (Fig. 156)

T.126 Fragment of a deep *kuṇḍā* with out-turned blunted rim. No. 1288, NVS, D, 1.

Carinated Vessels (Fig. 157)

T.127 Fragment of a carinated pot with sloping convex shoulder, carination near the base, out-turned rim. No. 1288a, NVS, D, 1.

127a Almost a complete pot with out-turned rounded rim, double carination, incised wavy decoration on the shoulder. No. 1288b, NVS, D, 1.

Globular Vessels (Fig. 157)

T.128 Almost complete vessel, base broken, funnel-shaped mouth. No. 1103, NVS, B, 1a.

128a A complete pot with rounded base, sloping straight neck, bulge at the shoulder. No. 449, NVS, B, 1.

Haṇḍī (Fig. 158)

T.129 Complete *haṇḍī* with rounded base, out-turned flat rim. No. 302a, NVS, G, 1.

129a Fragment, as above, with in-spread grooved top. No. 1125, NVS, B, 1a.

Paṇṭī (Fig. 158)

T.130 A complete *paṇṭi* with flat base, flared convex sides, flat top. No. 319, NVS, A, 1.

Dough (Fig. 158)

T.131 Fragment of a dough, black burnished inside, coarse rough base, knobbed wall. No. 938, NVS, D, 1.

Basins (Fig. 159)

T.132 Fragment of a deep basin with a flat lugged rim, coarse surfaces. No. 1753, NVS, D, 1a.

T.132a Fragment, as above having a shallow grooved wall. No. 22, NVS, I, 1.

T.132b Fragment, without carination, concave flaring walls, thickened rounded edge. No. 1986, NVS, D, 1a.

DECORATED SHERDS
(Figs. 160-162)

Designs

(*a*) Punctured dots,

(*b*) lime inlay, flower design and empty circles,

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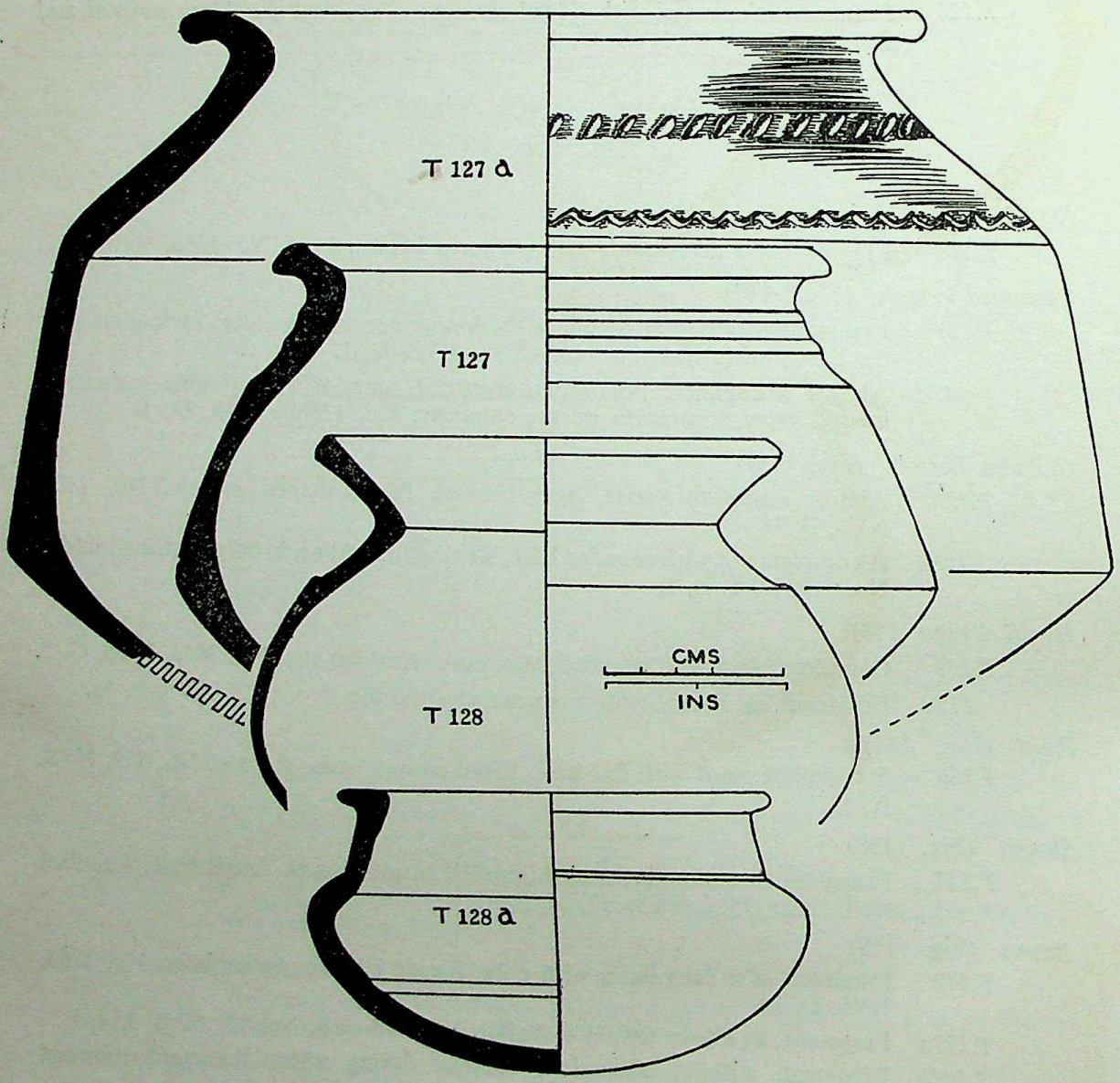

Fig. 157 : Types 127-128a [1/2]. Coarse Black : Carinated vessels (127-127a), Globular vessels (128-128). Period VI. (See p. 333).

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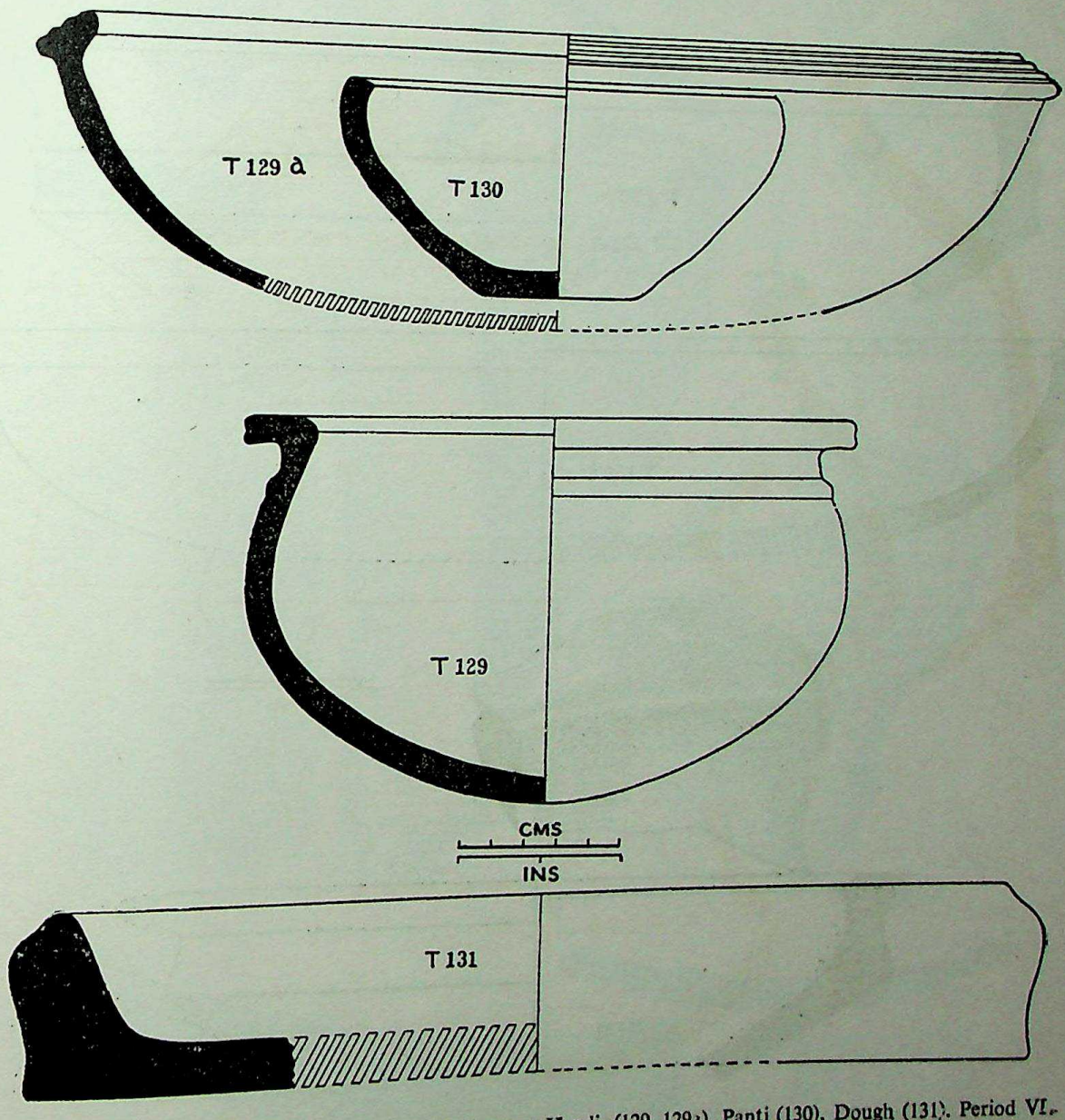

Fig. 158 : Types 129-131 [1/2]. Coarse black ware : Handi, (129, 129a), Panti (130), Dough (131). Period VI.
(See p. 333).

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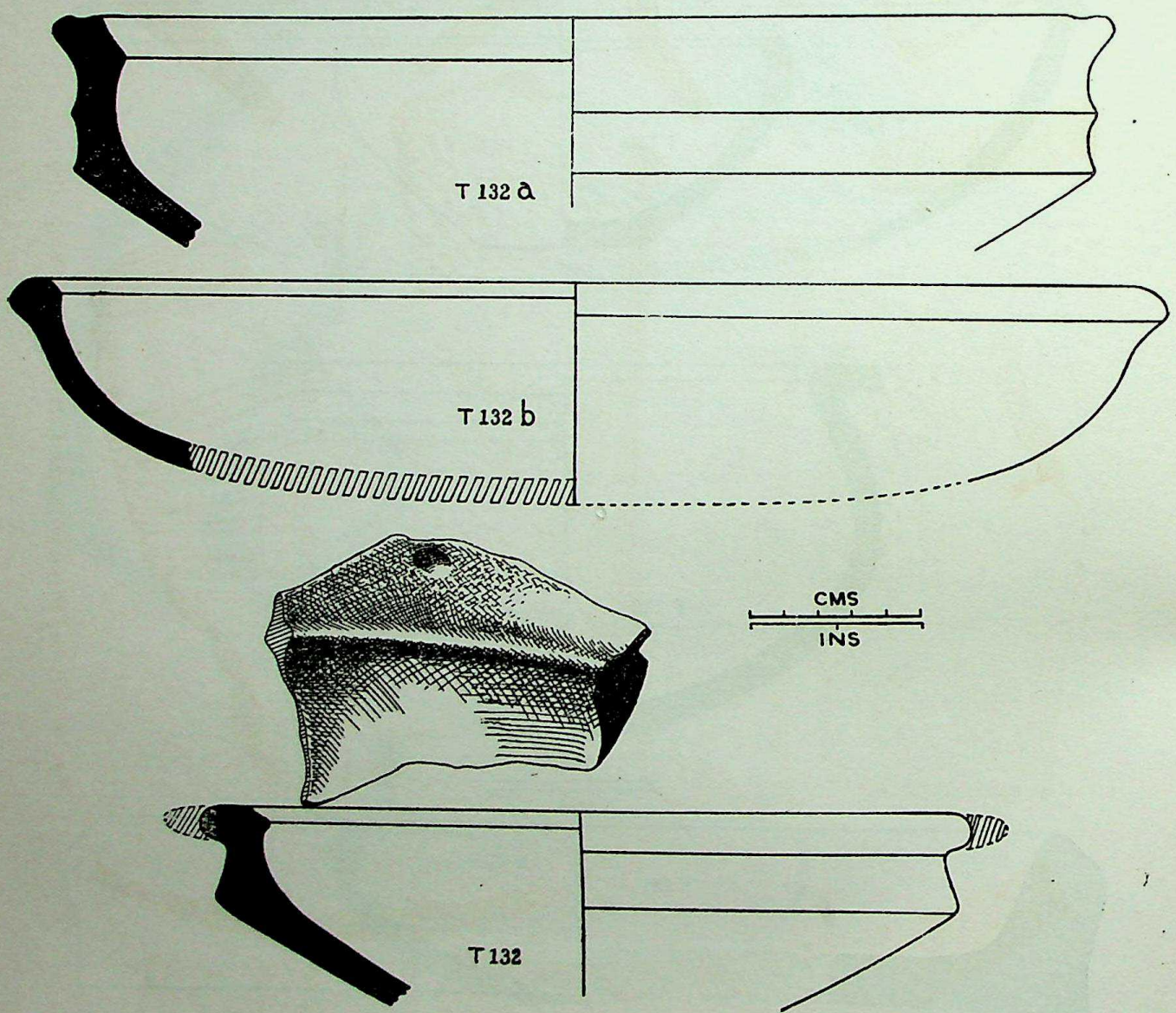

Fig. 159 : Types 132-132b [1/2]. Coarse Black Ware : Basins. Period VI. (See p. 333).

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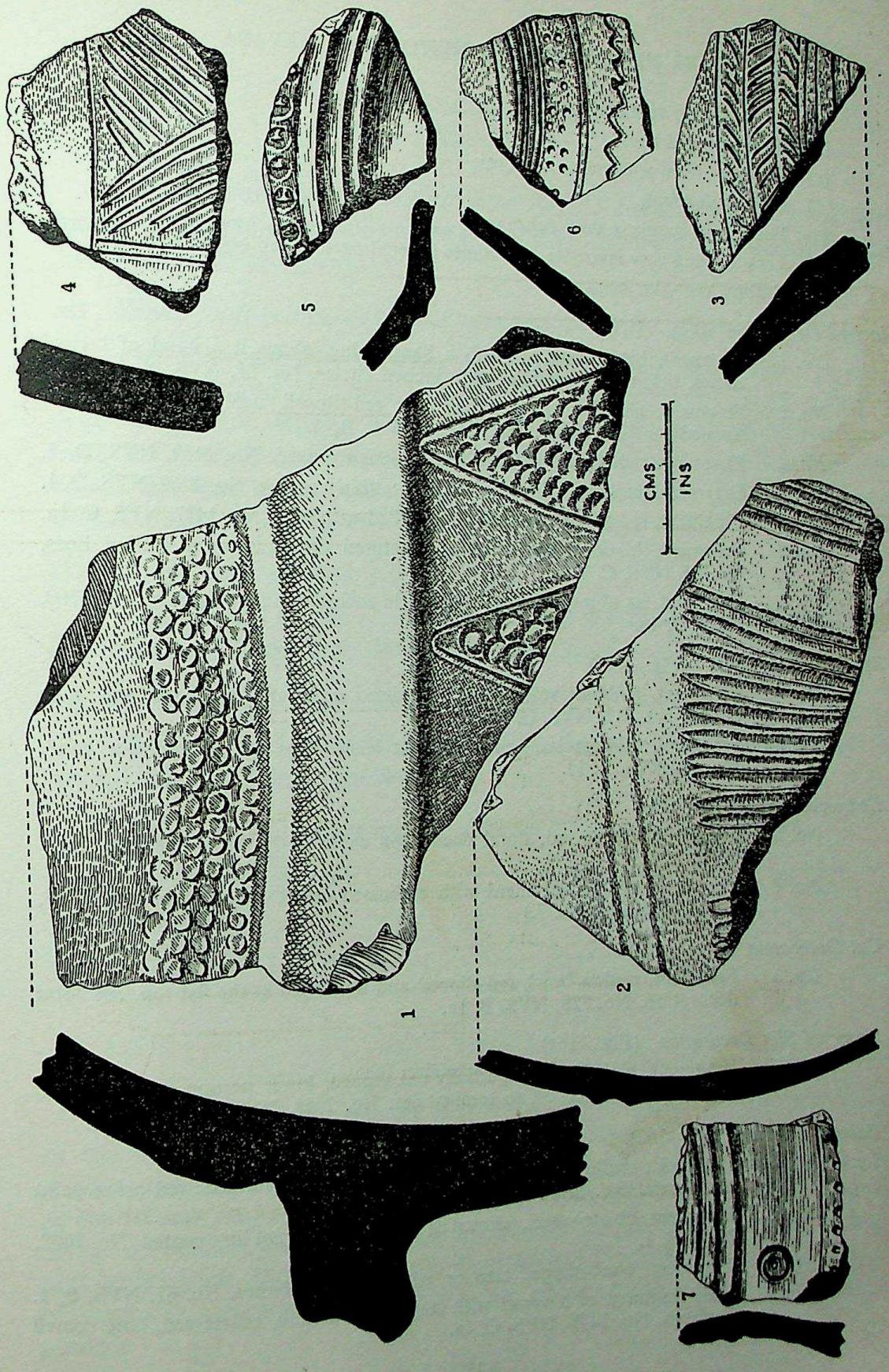

Fig. 160 : Incised Decorated Sherds. [1/2]. Period VI. (See p. 338).

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(*c*) Finger-tip on applique band,
(*d*) Zigzag incised lines,
(*e*) Triangles filled with punctured dots,
(*f*) Embossed spirals,
(*g*) Bands and spirals in deep ochre red,
(*h*) Lime coating very favourite, sometimes painted over by red ochre, and
(*i*) Brāhmī '*ma*'-like incision.

Incised Decoration (Fig. 160)

No. 1 Fragment, big storage jar with a banded lug, above it a band of incised circles, below triangles filled with incised circles. No. 27, NVS, X, 1.

No. 2 Fragment, globular vessel, upper part red-slipped, unslipped part full of scraped vertical bands. No. 2186, NVS, B, 1.

No. 3 Fragment, red-slipped sherd, chevron design incised. No. 2189, NVS, D, 1.

No. 4 Fragment, thick, red-slipped, slant lines within a square. No. 2969, NVS, D, 1.

No. 5 Fragment, red-slipped, incised circles filled with lime. No. 1477, NVS, C, 1a.

No. 6 Fragment, black-slipped outside, punctured dots and wavy incised lines. No. 62, NVS, C, 1.

No. 7 Fragment, as above, incised thick circle enclosing another circle. No. 1760, NVS, D, 1a.

Applique Decoration (Fig. 161)

No. 1 Fragment, globular vessel with constricted neck, applique band and rope design. No. 512, NVS, C, 1.

No. 2 Fragment, storage jar, red wash, cut leaf design out of applique band. No. 48, NVS, F, 1a.

Embossed Decoration (Fig. 161)

No. 3 Fragment, coarse red, floral decoration enclosed by wavy line. No. 1029, NVS, B, 1a.

No. 4 Fragment, coarse red sherd with embossed camel figures. No. 898, NVS, G, 1a. (*Fig. 164, No. 1.*)

Cut Decoration (Fig. 161)

No. 5 Fragment, rimless bowl, red slipped and burnished at the flat top, cut floral decoration. No. 728, NVS, B, 1a.

Reserved Slip Decoration (Fig. 161)

No. 6 Fragment, globular pot, partially red slipped, lower portion coarse brown, rough, slip scraped off to semi-circles. No. 2968, NVS, D, 1.

Painted Sherds (Fig. 162)

No. 1 Fragment, shallow bowl, coated with lime on both surfaces, red ochre paint at the rim. No. 1769, NVS, D, 1a.

No. 2 Fragment, oblate vessel, painted as above, interior not lime coated. No. 2002, NVS, B, 1.

No. 3 Fragment, black-slipped exterior with dull white bands. No. 61, NVS, B, 1.

No. 4 Half fragment of a vessel with stepped carination, coarse red, lime coated surfaces. No. 1478, NVS, C, 1a.

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POTTERY OF PERIOD VI

GLAZED WARE
(Figs. 162-163)

Seventy-nine glazed sherds were found. These show different techniques of glazing on various types of pottery. These can be grouped into the following three categories :—

(*a*) *Sherds with brittle, dull white core containing lot of quartz*

In these sherds, the glaze is either pale blue, deep blue, greenish blue or dull white or cream coloured. The decoration is drawn either in deep blue, black or dull black or semi-deep blue. In most of the cases both the surfaces are glazed, but the glaze is not smooth but thin and rough. Designs are either floral, dotted or geometrical. This type is restricted mostly to the layers of Period VI.

(*b*) *Sherds with red-brown compact core*

The glaze is either pale or deep blue and is porous, thick and crackled. In most of the cases, both the surfaces are glazed.

(*c*) *Sherds with a compact, hard kaolin core*

These are characterised by a thick shining silvery glaze which is smooth and uniformly applied.

The periodwise distribution of these categories is as follows

Periods	Types			Totals
	a	b	c	
VI	45	10	—	55
V	14	5	4	23
IV	—	—	1	1

Like Maheshwar, Nevasa also yields the evidence of the antiquity of the art of glazing pottery in pre-Muslim days. The earliest sherds differ essentially in glaze from the sherds of the Muslim period (VI) inasmuch as the former bear a thick, uniform and smooth glaze. Sherds of Period V reveal a crackled glaze while those of Muslim period (VI) show rough but uncrackled glaze. Moreover the sherds of Period IV show a large percentage of kaolin in clay, while those of the last phase contain abundant quartz powder.

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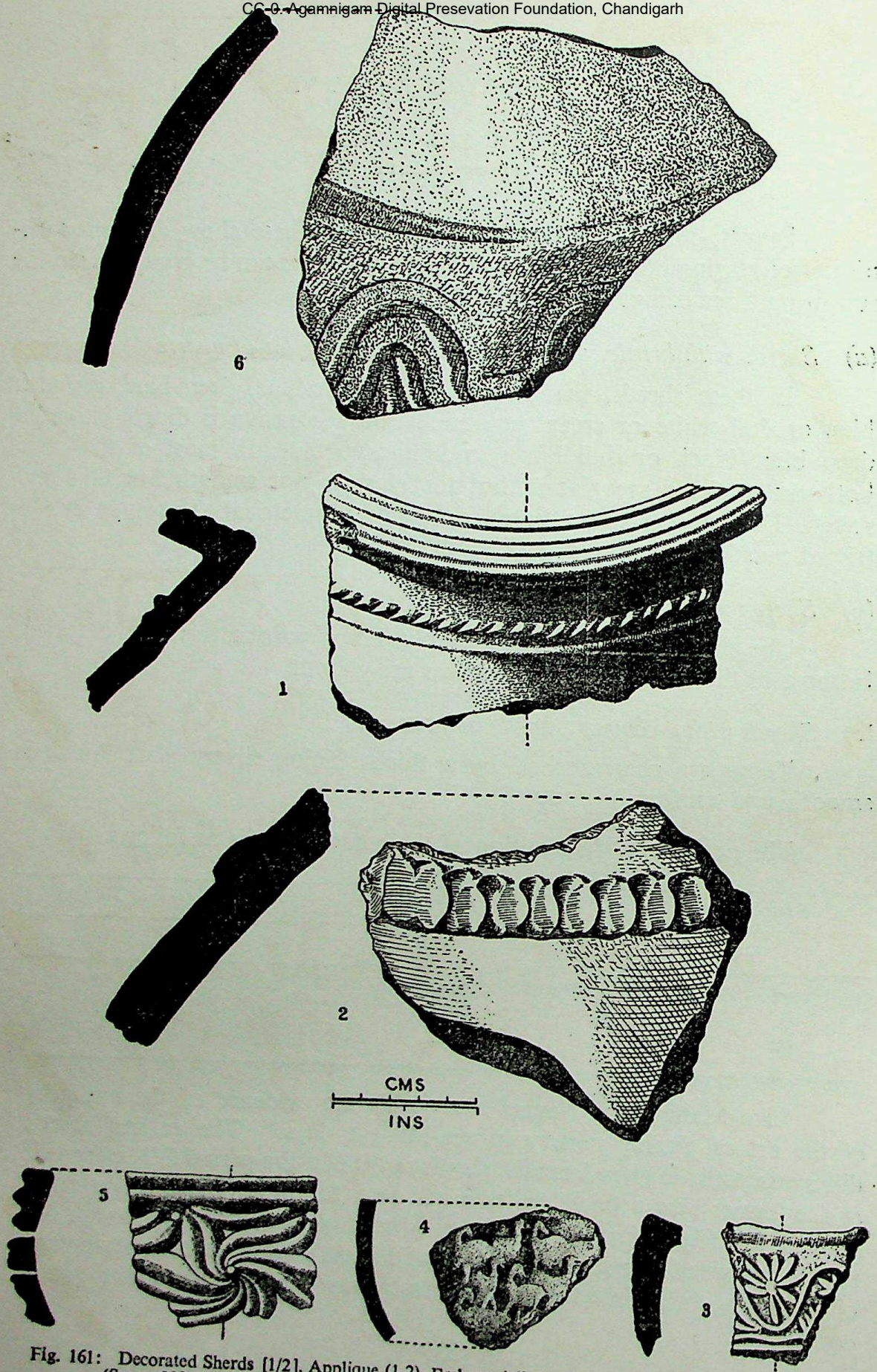

Fig. 161: Decorated Sherds [1/2]. Applique (1-2), Embossed (3-4), Cut (5), Reserved slip (6). Period VI.
(See p. 338).

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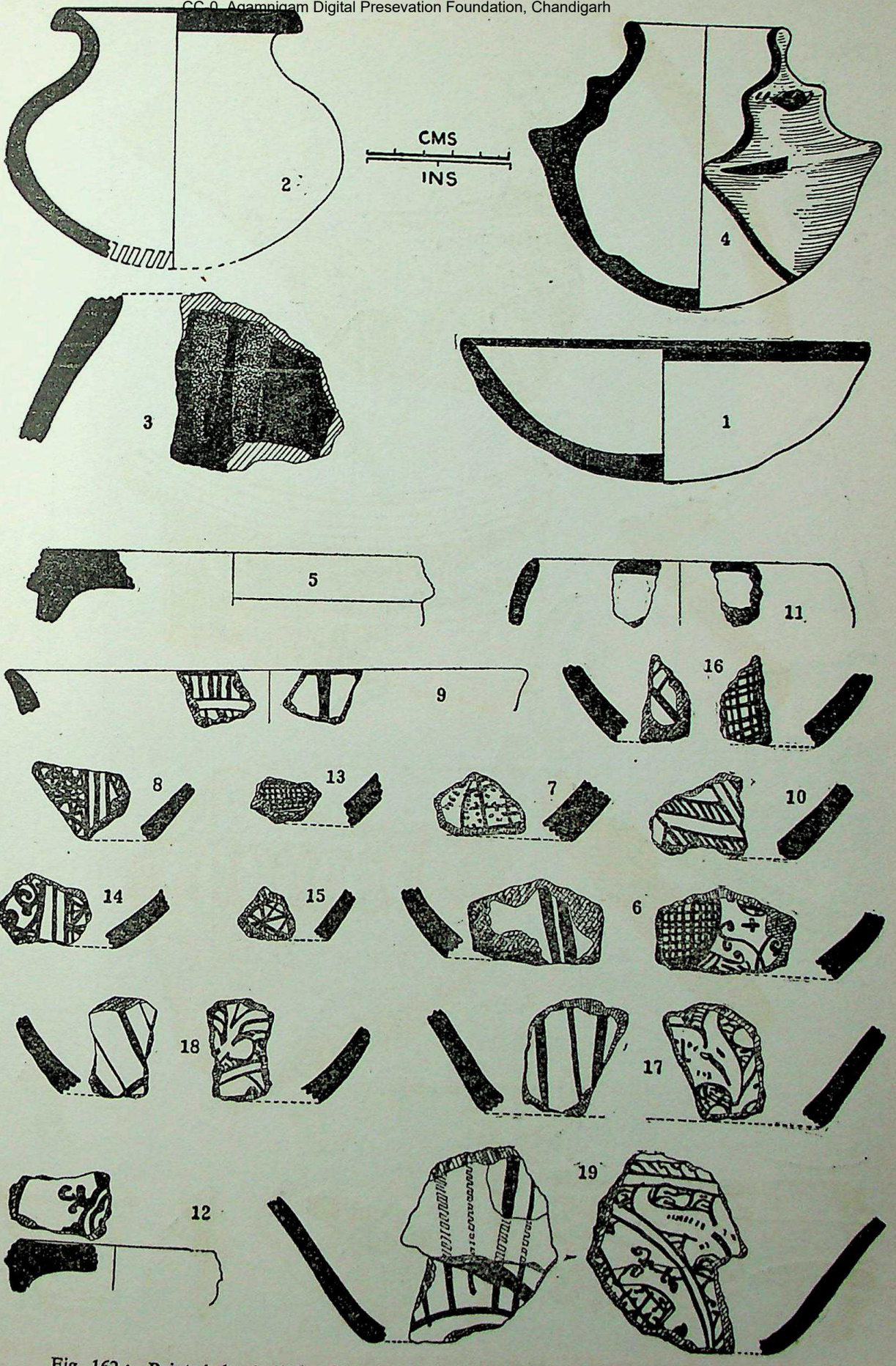

Fig. 162 : Painted sherds (1-4) ; Glazed ware (5-19). Period VI. [1/2]. (See pp. 338, 344).

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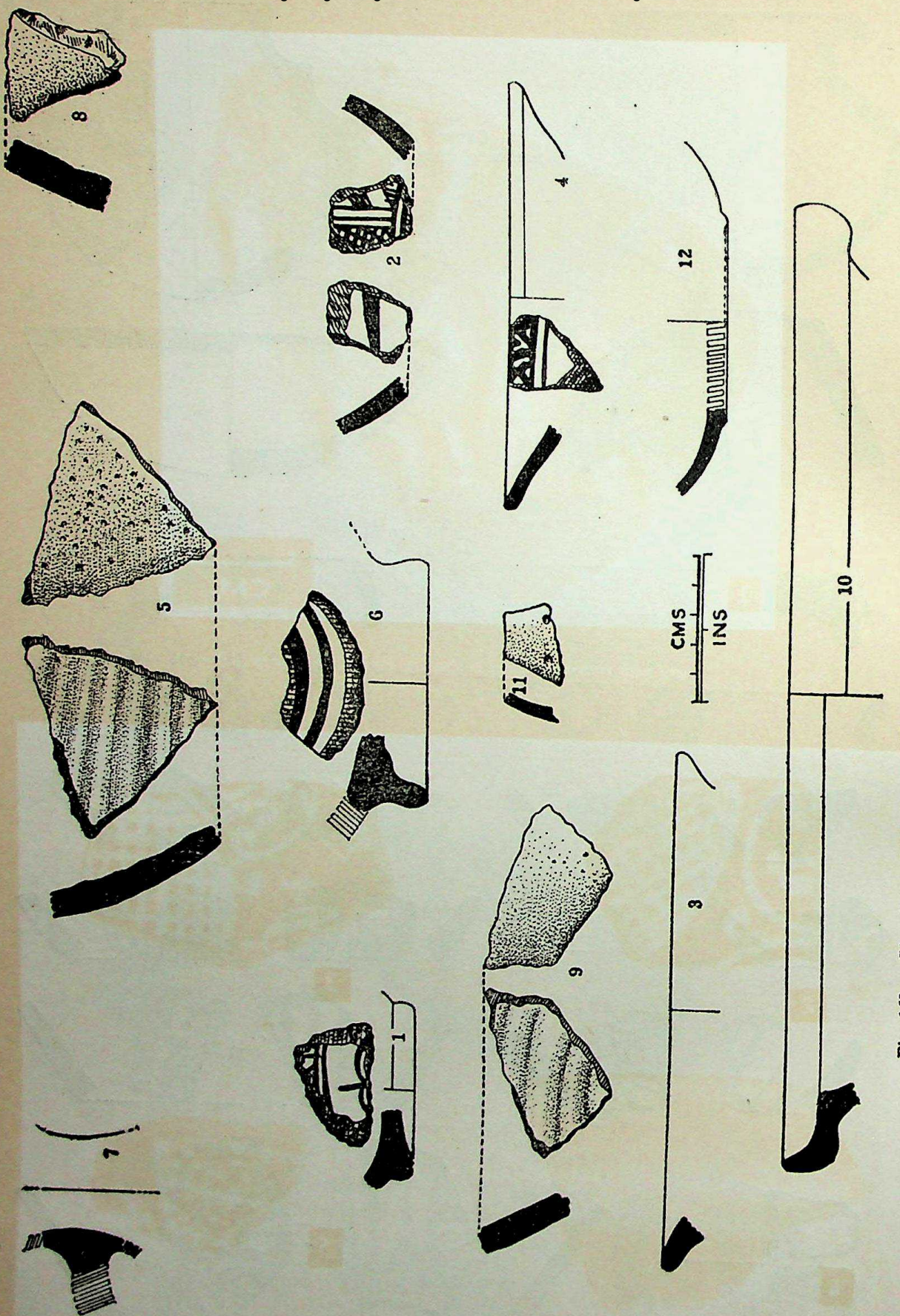

Fig. 163 : Glazed ware (1-9). Celadon Ware (10-12). [1/2]. Period VI. (See pp. 344-345).

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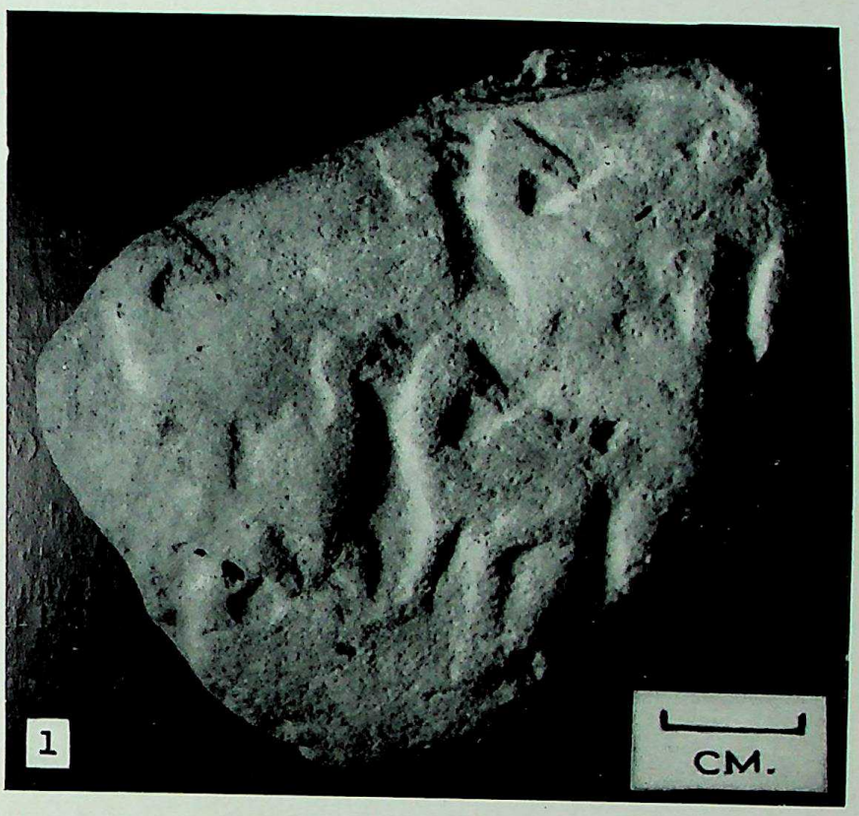
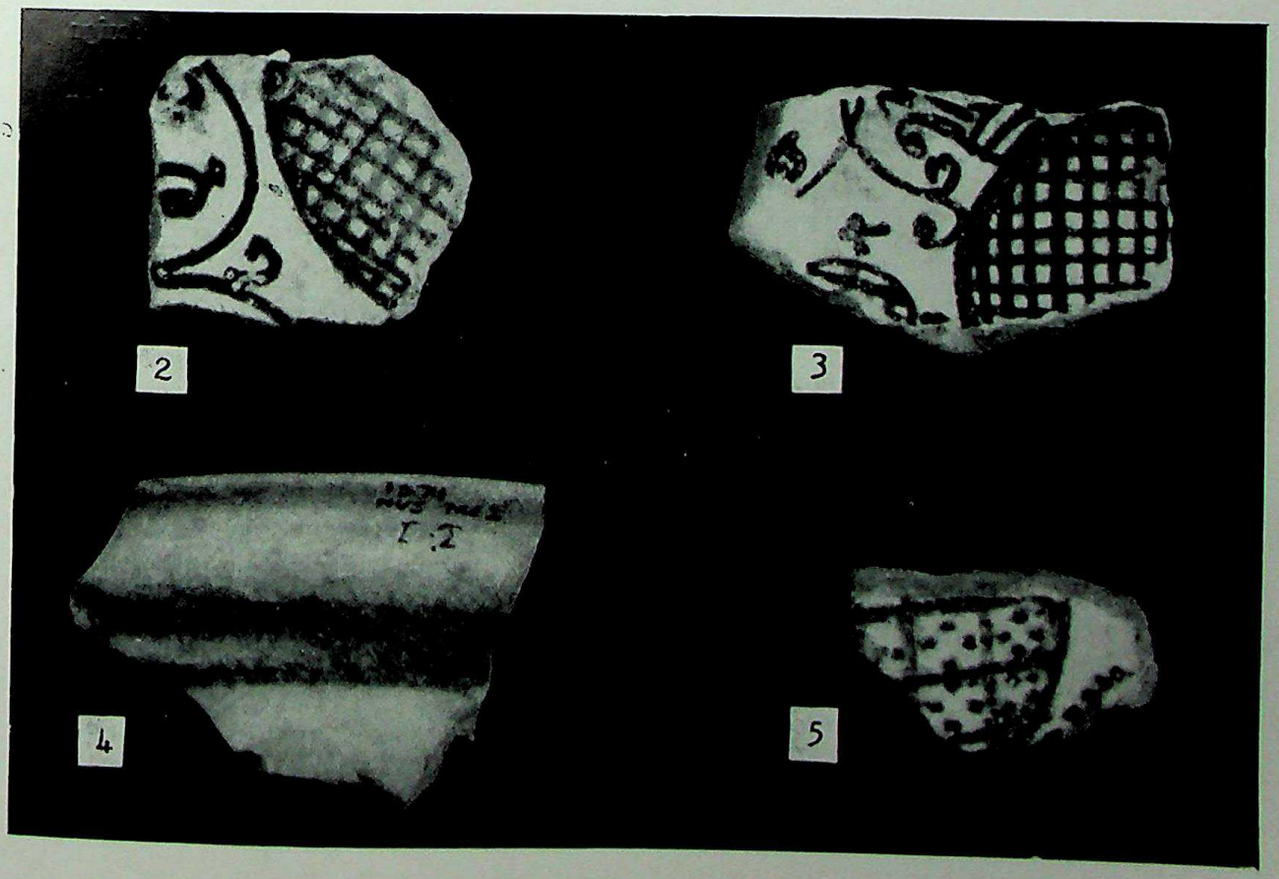


Sherd with embossed camel design (1). Period VI. *(See pp. 338.)*



Glazed sherds (2, 3, 5) ; Celadon sherd (4). Period VI. *(See pp. 344-345.)*
Fig. 161.

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The following are illustrated.

Variety 'a' (Fig. 162)

No. 5 Fragment of the ringed base of a vessel with thin white glaze on both the surfaces. No. 3307, NVS, I, 1. (VI).

No. 6 Fragment, outer surfaces with bluish-white blotchy glaze with two bands in black; inner surface with a design of an hatched arch and creeper-like linear decoration in purple black. No. 1122a, NVS, I, 1. (VI). [*Fig. 164, No, 2*]

No. 7 Fragment, thick sherd, outer surface unglazed, inner with bluish glaze with dots and squares design in deep blue. No. 1122, NVS, H, 2. (V). [*Fig. 164, No. 5.*]

No. 8 Fragment, medium thick sherd, one surface with a white glaze, other with a design of squares and diamonds in blue. No. 765, NVS, B, 1. (VI).

No. 9 Fragment, probably a shallow dish or a plate-like vessel with flared sides, exterior white glazed, interior with horizontal and vertical linear design in blue on white glaze. No. 501, NVS, H, 1a. (VI).

No. 10 Fragment, probably base portion, outer surface showing patches of glaze, interior having a design of hatched slanting groups in deep ultramarine blue over a pale blue surface. No. 462, NVS, A, 2. (V).

No. 11 Small fragment as No. 501 above, but with a band in deep blue at the edge only. No. 457, NVS, E, 1a. (VI).

No. 12 Small fragment as No. 3307 above, but with exterior devoid of glaze, interior with a trefoil flowery decoration in deep blue on pale blue surface. No. 1, NVS, D, 1. (VI).

No. 13 Fragment, thick sherd, exterior white glazed, interior with hatched design in deep blue. No. 583, NVS, H, 1a. (VI).

No. 14 Fragment, exterior white glazed, interior with a deep bright blue glaze having spirals, bands and zigzags in black. No. 348, NVS, H, 1. (VI).

No. 15 Fragment, one surface white glazed, the other blue glazed with a design of crossed squares in deep blue. No. 221, NVS, B, 1. (VI).

No. 16 Fragment, exterior white glazed with bands in chocolate, interior surface bright blue glazed squared with horizontal and vertical lines in deep blue. No. 387, NVS, D, 1. (VI).

No. 17 Fragment, outer surface white glazed with bands in dull black, inner surface with a floral design in pale blue on dull white glaze. No. 1744, NVS, H, 2. (V).

No. 18 Fragment, as above. No. 219, NVS, E, 1a. (VI).

No. 19 Fragment of probably a shallow dish with flared sides, thick at the base rest as of No. 1744 above. No. 218, NVS, E, 1a. (VI).

Variety 'b' (Fig. 163)

No. 1 Fragment, ringed base, exterior white glazed, interior also same but with a design in deep blue. No. 2676, NVS, H, 1a. (VI).

No. 2 Fragment, small sherd, exterior deep blue glazed with a band in black, interior surface also same but having a design of hatched lines. No. 428, NVS, D, 1. (VI).

No. 3 Fragment, probably a shallow pan, interior only deep blue glazed. No. 1163, NVS, I, 2. (V).

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No. 4 Fragment, probably of a shallow pan, exterior white glazed, interior also same but with a linear design in deep blue. No. 215, NVS, D, 1. (VI).

No. 5 Fragment possibly of a globular vessel with both the surfaces having a thick, crackled greenish glaze with deep blue specks. No. 1794, NVS, I, 3. (IV).

No. 6 Fragment, probably a small pot-rest(?) most of the surface coarse red and unglazed, the glazed portion consists of white glaze with design in deep blue. No. 1338, NVS, D, 2. (V).

Variety 'c' (Fig. 163)

No. 7 Fragment of probably a small lug or handle with a uniformly thin silvery-creamy glaze. No. 5362, NVS, G, 6. (V).

No. 8 Fragment, yellowish hard core, both the surfaces having a thick bright silvery glaze. No. 5341, NVS, E, 9. (IV).

No. 9 Fragment, as above but with one surface having bluish-silvery glaze. No. 2445, NVS, F, 3. (V).

Celadon Ware

(Fig. 163)

Twelve sherds of the celadon ware were found. Of these, layers of Period VI yielded five and the topmost layer of Period V gave the rest.

These sherds show a compact dull white core with a thick coating of glassy material on both the surfaces. This can very well be seen in section. The colour of the coating is mostly olive green, though a sherd with a bluish coating was also found.

Most of the sherds are devoid of any decoration. They have a plain olive green uniform coating. Only in one case was found a chevron decoration in blue on bright white surface.

The following are illustrated.

No. 10 Fragment of probably a dish with a stepped rim, core China white, thick olive green enamel on both the surfaces. No. 1371, NVS, H, 2. (V). (*Fig. 164, No. 4*)

No. 11 Fragment, technique as above, two small perforations bored from outside. No. 1625, NVS, H, 2. (V).

No. 12 Fragment, base portion, probably a dish with ringed base, pure white surface. No. 116, NVS, B, 1. (VI).

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X

BEADS, PENDANTS AND AMULETS

Nevasa yielded one thousand six hundred and fifty-five beads. The material and periodwise distribution is as follows:

Material	Periods					
	III	IV	V	VI	Surface	Totals.
Agate ..	9	5	18	30	1	63
Amazonite ..	2	—	—	—	—	2
Amethyst ..	—	1	3	1	—	5
Bloodstone ..	—	2	—	—	—	2
Carnelian ..	7	26	26	16	5	80
Chalcedony ..	1	1	—	1	—	3
Coral ..	—	2	20	4	1	27
Crystal ..	—	5	1	—	—	6
Faience ..	14	7	132	2	—	155
Glass ..	—	32	223	90	3	348
Jasper ..	1	13	5	—	—	19
Lapis ..	—	2	1	—	1	4
Opal ..	—	—	2	—	—	2
Shell ..	3	29	113	9	—	154
Soapstone ..	—	2	2	—	—	4
Steatite ..	554	5	—	—	—	559
Terracotta ..	3	39	162	18	—	222
Totals ..	594	171	708	171	11	1655

It will be evident from the above chart that Periods III and V yielded above two-thirds of the total quantity of the beads. Steatite was the most favourite material of the Chalcolithic (Period III), while glass, faience and terracotta were extensively used for bead making in the Indo-Roman (Period. V).

Agate (Fig. 165)

These are noteworthy for the selection of material consisting mostly of delicately banded variety. The most abundant beads are spherical which are even now used by the Fakirs who call them 'sulemāni' beads. Some specimens are unperforated showing that they might have been locally made.

Spherical: Period V, 9; VI, 27.
Disc: Period V, 1.
Cylindrical: Period V, 1.
Barrel: Surface, 1.

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Truncated barrel:	Period III, 7; IV, 4.
Globular:	Period V, 3.
Oval:	Period V, 1.
Square cylinders:	Period V, 2.
Triangular barrel:	Period VI, 1.
Tablet:	Period VI, 1.
Biconical:	Period III,1; IV,1; VI,1.
Double concave:	Period V, 1.

Fig. 165, No. 1 Cylindrical bead of banded agate with one end having a white band, middle portion smoky and the other end tawny. No. 4205, NVS, F, 3, (V)

No. 2 A spherical bead, half black and half banded. No. 937, NVS, G, 2, (V).

No. 3 Perfect barrel, half white and half black. No. 2369, NVS, Surface.

No. 4 Truncated long barrel, entire surface full of ripple bands in grey-white. No. 7691, NVS, F, 12. (III).

No. 5 Truncated short barrel, greyish black. No. 8548, NVS, F, 12. (III—from Urn No. 25a).

No. 6 Short square cylinder, well polished. No. 6081, NVS, H, 7. (V).

No. 7 A small square bead of slate colour. No. 3593, NVS, G, 4. (V).

No. 8 A triangular barrel of ashy colour. No. 673, NVS, F, 1a. (VI).

No. 9 A tablet bead of banded agate. No. 529, NVS, E, 1a. (VI).

No. 10 Hexagonal bicone of ashy colour. No. 1634, NVS, H, 1. (VI).

No. 11 Short truncated bicone of slate colour. No. 5156, NVS, I, 6. (III).

No. 12 A double-concave *damaru*-like bead of slate coloured agate, half perforated. No. 6589, NVS, F, 6. (V).

Amazonite (Fig. 165)

This is represented by two beads both belonging to Period III. One comes from a burial urn, and the other is half perforated, therefore, possibly locally made.

Fig. 165, No. 13 Long barrel of dull greenish colour. No. 7541, NVS, F, 11 (III—from Urn No. 7a).

No. 14 Broken cylinder, surfaces showing horizontal flake flutings, half perforated. No. 5328, NVS, X, 5. (III).

Amethyst (Fig. 165)

Five beads represent this material. Of these, two are globular (one each from Periods IV and V), one pear-shaped (Period V), one triangular barrel (Period VI) and one tablet barrel (Period V).

Fig. 165, No. 15 Pear-shaped bead. No. 920, NVS, E, 2. (V).

No. 16 Triangular barrel shaped bead with irregular non-synchronising perforations. No. 656, NVS, C, 1a. (VI).

No. 17 Truncated tablet barrel with grooved collars. No. 2046, NVS, A, 6, (V).

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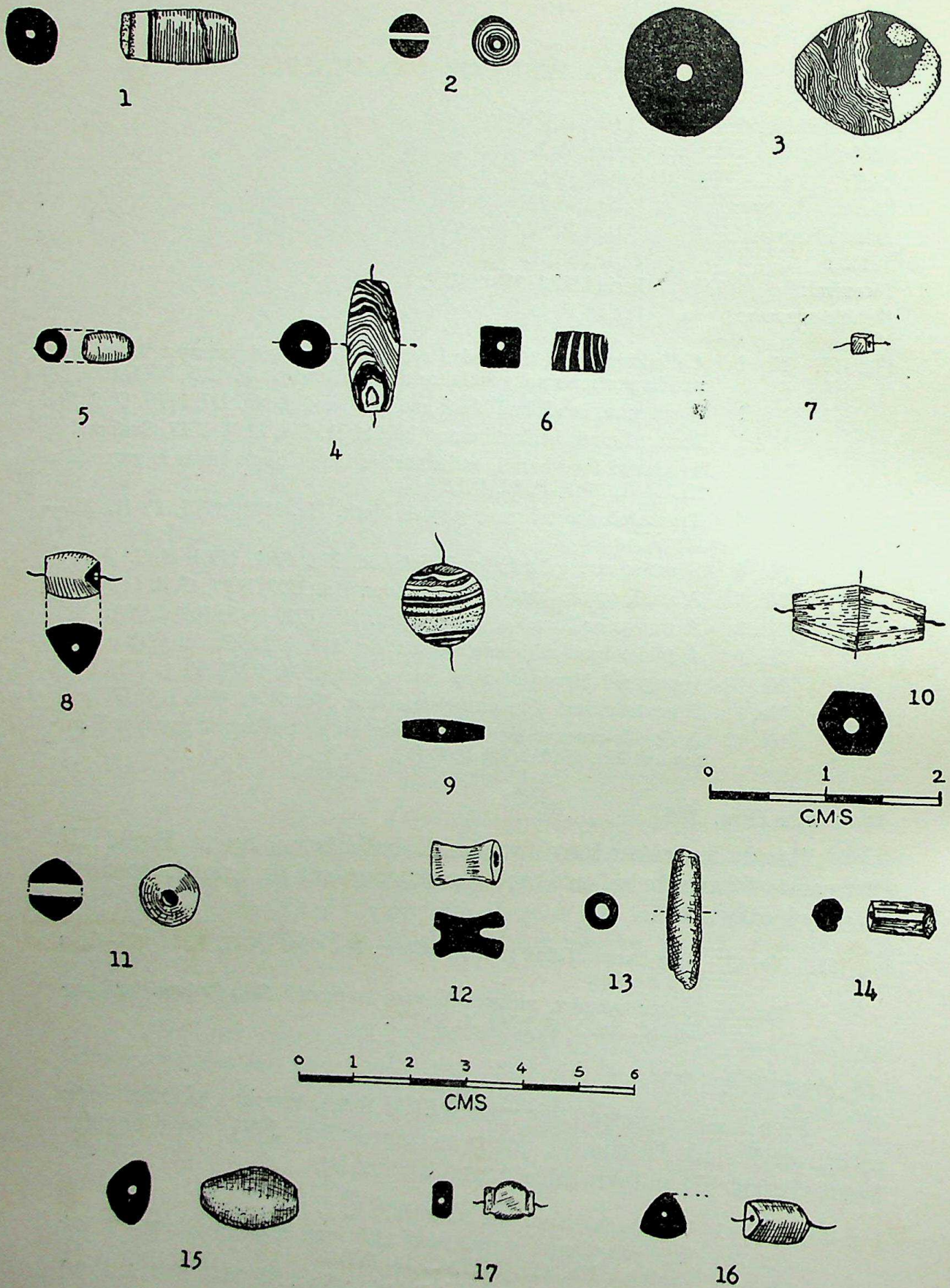

Fig. 165 : Beads [1/1]. Agate (1-12), Amazonite (13-14), Amethyst (15-17). (See p. 347).

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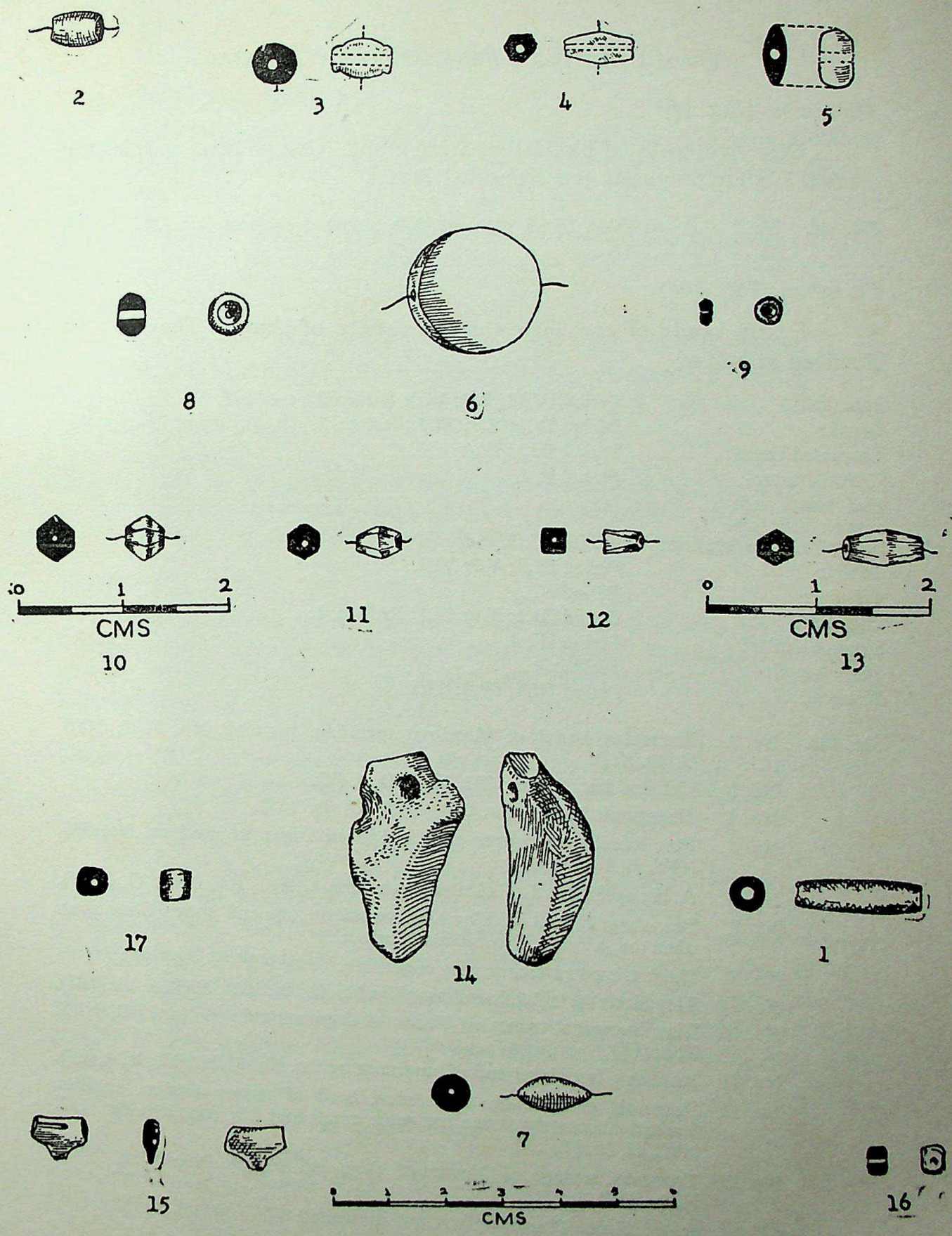

Fig. 166 : Beads [1/1]. Bloodstone (1), Carnelian (2-13), Chalcedony (14), Coral (15-17). (See pp. 350-351).

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Bloodstone (Fig. 166)

Only two beads of bloodstone were found. One of them is spherical (Period IV) and the other is a truncated barrel.

Fig. 166, No. 1 A truncated barrel with red dots, polished surfaces. No. 3837, NVS, B, 9. (IV).

Carnelian (Fig. 166)

Eighty beads of carnelian show a variety of shapes. They can be classified as below:

Spherical:	Period IV,13; V,9; VI,5; Surface,1
Barrel:	Period IV,1; V,3; VI,3; Surface, 2.
Truncated barrel:	Period III,1; IV,3; V,3.
Collared barrel:	Period V, 1.
Flat barrel with convex ends and breadthwise perforation:	Period VI, 1.
Tablet:	Period IV,5; V,3; VI,2.
Tubular:	Period V,1.
Globular:	Period III,1; V,6; VI,2; Surface, 1.
Squat globular:	Period III, 1.
Pear shaped:	Surface, 1.
Biconical:	Period III,4; IV,4; VI,2.

Fig. 166, No. 2 Truncated barrel of blood-red carnelian, polished. No. 7117, NVS, G, 12. (III).

No. 3 Collared barrel. No. 1793, NVS, D, 4. (V).

No. 4 Hexagonal barrel. No. 670, NVS, D, Ia. (VI).

No. 5 Flat barrel with convex ends and breadth-wise perforations. No. 396, NVS, B, 1. (VI).

No. 6 A big tablet bead of chalcedony-carnelian. No. 2266, NVS, G, 2. (V).

No. 7 Pear-shaped bead of blood-red carnelian, one end shows filing scars when on a lathe. No. 6040a. Surface.

No. 8 Short truncated bicone, flat edges. No. 6940, NVS, F, 11. (III).

No. 9 Tiny biconical tablet, found near Urn No. II. No. 3501, NVS, A, 10a. (III).

No. 10 Tiny hexagonal truncated bicone of deep red colour. No. 1770, NVS, X, 3. (IV).

No. 11 As above, but bigger and of impure carnelian. No. 4275, NVS, Y, 4. (IV).

No. 12 Fragment of probably a biconical bead of square section, surfaces facetted alternately at the end with small and big triangles. No. 192, NVS, H, 1a. (VI).

No. 13 Truncated septagonal bicone of deep red colour. No. 1079, NVS, H, 1a. (VI).

Long but truncated bicone (Period III) is not illustrated.

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Chalcedony (Fig. 166)

Three beads were found. Of these one is a natural nodule tubular in shape (Period IV); the second is spherical (Period VI), and the third is a pendent.

Fig. 166, No. 14 A natural nodule neatly perforated from both sides resulting in a perforation of hour-glass section. No. 6743, NVS, I, 6. (III).

Coral (Fig. 166)

Of the twenty-seven beads, eleven are short tubular (Period V, 10; Period VI, 1); thirteen, short cylinders with tiny perforation (Period V, 10; Period VI, 2; Surface 1); one globular (Period VI) and two triangular pendents (Period IV).

Fig. 166, No. 15 Triangular pendent of coral in its natural state. No. 2448, NVS, I, 3. (IV)
No. 16 Short cylinder with breadthwise perforation. No. 1940, NVS, Y, 2. (V)
No. 17 Short cylinder. No. 5566, NVS, C, 4. (V).

Crystal (Fig. 167)

Six beads accounted for this material which is of a poor quality. Their facetting is mediocre and they bear no polish. The shapes are tablet (Period IV, 2; Period V, 1), truncated barrel (Period IV, 1), and septagonal barrel (Period IV, 1).

Fig. 167, No. 1 A septagonal barrel bead with truncated ends. No. 1954, NVS, X, 3. (IV)
No. 2 A flat bead with pentagonal outline. No. 1953, NVS, X, 3. (IV).

Faience (Fig. 167)

Faience accounted for one hundred and fifty-five beads, most of which belonged to Period V. Except quite a few, most of the beads are of blue faience. Very few are white, and still fewer are cream-coloured. In some cases, the core is white and a blue glaze covers the original white surface. As against this, many are blue even to the core. The glaze, however, is invariably blue save in two cases, where it is white. A few specimens, mostly of tiny globular shape and associated with burial urns, are Indian red in colour.

The following shapes are represented:

Spherical:	Period V,1.
Tiny globular:	Period III, 14.
Granulated globular:	Period VI, 1.

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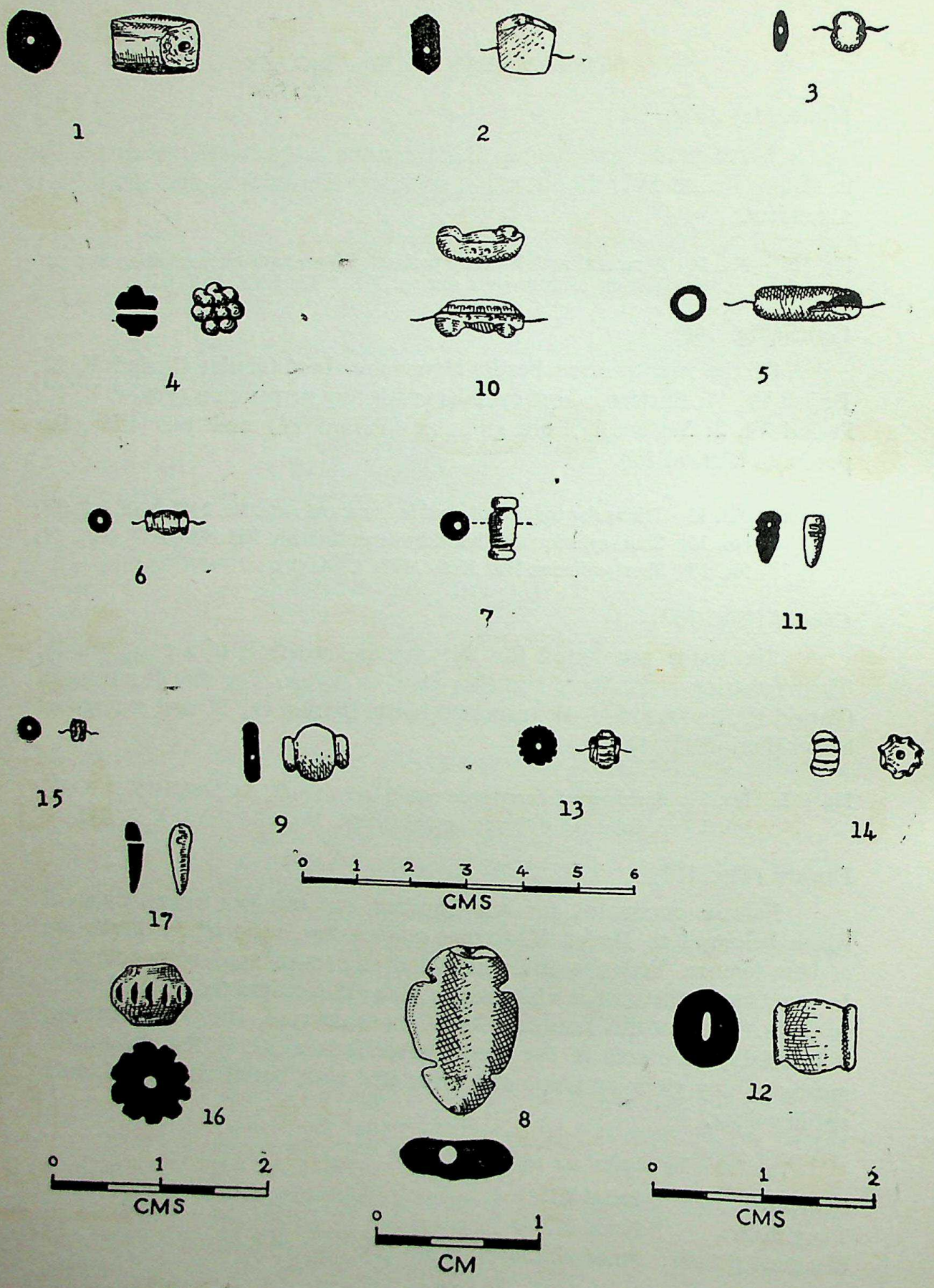

Fig. 167 : Beads [1/1] : Crystal (1-2), Faience (3-17). (See pp. 351, 354).

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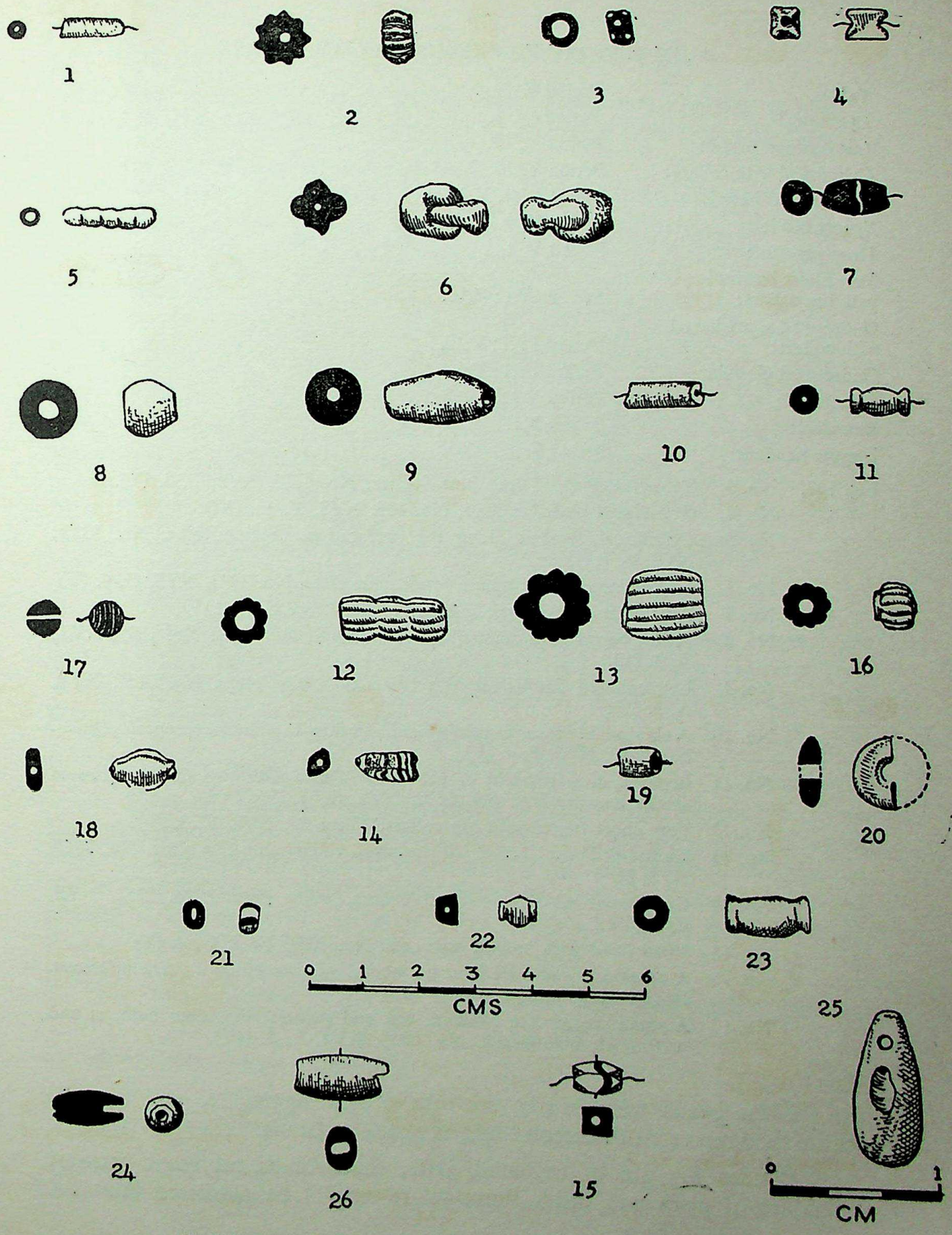

Fig. 168 : Beads [1/1] : Glass (1-23), Jasper (24-26). (See pp. 355-360).

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Tablet:	Period V, 3.
Cylindrical:	Period IV, 1.
Lug collared barrel:	Period V, 68.
Cylindrical with collars:	Period V, 18.
Collared flat barrel:	Period IV,4; V,8.
Spacer bead:	Period V, 1.
Drop pendent:	Period V, 1.
Very short barrels with lug collars:	Period IV,1; V,18.
Gadrooned short barrel with collars:	Period IV,1; V,10.
Gadrooned globular:	Period IV,1; V,4.
Segmented:	Period V,1.
Biconical:	Period V,1.
Dagger pendent:	Period IV,1.

Fig. 167, No. 3 Spherical bead of deep blue faience. No. 6617, NVS, F, 4. (V).

No. 4 Granulated globular bead. No. 803, NVS, Y, 1a. (VI).

No. 5 Cylindrical, broken along the perforation, medium blue. No. 3383, NVS, B, 7. (IV).

No. 6 Lug collared barrel with a bright blue glaze. No. 3443, NVS, G, 4. (V).

No. 7 A cylinder with incised collars. No. 2938, NVS, H, 3. (V).

No. 8 A flat barrel with collars, notched only at the edges. No. 1639, NVS, A, 3. (V).

No. 9 Lug collared flat barrel with traces of a blue glaze. No. 1401, NVS, A, 3. (V).

No. 10 A clamp-like spacer bead of glazed blue faience with two tiny perforations. No. 6110, NVS, F, 4. (V).

No. 11 Inverted drop pendent of pale blue faience with two shallow grooves at the broader end. No. 3737, NVS, G, 4. (V).

No. 12 Very short barrel with lug collars. No. 1427, NVS, C, 3. (V).

No. 13 Gadrooned short barrel with grooved collars and blue glaze. No. 3827, NVS, H, 4. (V).

No. 14 Gadrooned globular without collars, white glazed. No. 2252, NVS, E, 3. (V).

No. 15 Small bead with incised segments. No. 4092, NVS, G, 4. (V).

No. 16 A biconical bead with short horizontal incisions along the circumference. No. 1215, NVS, D, 3. (V).

No. 17 A small dagger-like pendent, one end pointed, the other bulbous and perforated, blue-glazed. No. 6064, NVS, E, 8. (IV).

Glass

Glass beads were nearly one-fifth of the aggregate, and next to steatite they represent the second largest group of beads.

Besides the use of coloured glass, these beads represent various techniques of glass and bead manufacture as will be discussed later on.

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They also reveal a variety of shapes. Glass beads are restricted mostly to Period V which was the most flourishing period in the lifestory of Nevasa.

The distribution of different glass beads is as follows:

Glass	Periods					Total
	III	IV	V	VI	Surface	
Gold foil ..	—	2	1	2	—	5
Yellow matrix ..	—	—	8	5	—	13
Black ..	—	1	22	16	—	39
Green ..	—	5	61	15	2	83
Red ..	—	13	33	14	—	60
Purple ..	—	—	1	—	—	1
Grey ..	—	—	2	—	—	2
Blue ..	—	4	51	19	1	75
Yellow ..	—	7	41	14	—	62
White ..	—	—	3	5	—	8
Totals ..	—	32	223	90	3	348

The green, blue and yellow glass beads were mostly in use.

A. Beads with gold foil

Of the five, two each came from the layers of Periods IV and VI, and one from Period V. The shapes are collared short barrel (Period IV), globular (Period VI) and small barrel (Period V). Gold leaf is put in between two layers of blue or white glass.

B. Beads with lemon yellow matrix (Fig. 168)

Eight of these belonged to Period V and five to Period VI. These show a lemon yellow matrix covered over by sap green or emerald green coating. These have been found at several sites of the Deccan in the Andhra levels. The shapes at Nevasa resolve themselves into short truncated barrel (Period V, 4; Period VI, 2), short cylinders (Period V, 3; Period VI, 2), tubular (Period V, 1) and irregular (Period V, 1).

Fig. 168, No. 1 Tubular bead, lemon yellow matrix, green glass coating. No. 751, NVS, A, 2. (V).

C. Black glass beads (Fig. 168)

Thirty-nine beads represent black glass. Several of these beads are made by the wire-wound process, and all are opaque.

Truncated barrel: Period V,5; VI,4.
Tiny circular: Period V,6; VI,3.

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Very short cylinders:	Period V,6; VI,2.
Short truncated bicone:	Period VI,2.
Collared barrel:	Period V,1; VI,1.
Collared flat barrel:	Period IV,1.
Square cylinder with concave ends:	Period VI,1.
Segmented:	Period V,1.
Globular:	Period VI,1.
Very short barrel:	Period VI,2.
Tiny, square truncated barrel:	Period V,1.
Short truncated barrel:	Period V,1.
Disc:	Period V,1.

Thus one belongs to Period IV, twenty-two to Period V and sixteen to Period VI.

Fig. 168, No. 2 A disc bead of black glass. No. 1157, NVS, C, 3. (V).

No. 3 Short truncated barrel of black glass with white glass dots affixed later on as eyes. No. 1158, NVS, C, 2. (V).

No. 4 Square cylinder with concave ends. No. 7, NVS, E, 1. (VI).

No. 5 A thin, segmented bead. No. 1051a, NVS, C, 2. (V).

D. Green glass beads (Fig. 168)

Green coloured beads present the biggest group in glass beads. These reveal different shades of green. Several beads of this group are made by wire-wound process, while a few are moulded, e.g. the chain bead. One or two specimens show fusion of different bands of variously shaded green glass when in plastic state.

(*a*) *Persian Green*		
Globular:	V,2; VI,1.	Period V,6; VI,4.
Cylinder disc:	V,1; VI,1.	
Short cylinder:	V,2.	
Tubular:	VI,1.	
Truncated barrel:	V,1.	
Chain bead:	VI,1.	
(*b*) *Turquoise Green*		
Globular:	IV,1.	Period IV,1; V,2; VI,4.
Tiny circular:	V,1; VI,2.	
Short cylinder:	VI,2.	
Truncated barrel:	V,1.	
(*c*) *Royal Green*		
Short barrel:	IV,1.	Period IV,1; VI,1.
Tubular:	VI,1.	
(*d*) *Light Hookers Green*		
Tiny short cylinder:	VI,1.	Period V,1; VI,1.
Hexagonal biconical:	V,1.	

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(*e*) *Sap Green*

Globular:	VI,1.	Period IV,2; V,2; V,1; Surface 1.
Collared tablet barrel:	IV,2; V,1.	
Truncated barrel:	V,1.	
Annular:	Surface, 1.	

(*f*) *Emerald Green*

Short cylinder:	V,1.	Period IV,1; V,50; VI,4; Surface 1.
Onion shaped:	V,2; VI,1.	
Barrel:	V,1; VI,1.	
Short truncated barrel:	V,3.	
Truncated bicone:	V,4; VI,1.	
Annular:	V,1.	
Square cylinder:	V,2.	
Tiny globular:	IV,1; V,35; VI,1, Surface 1.	
Segmented:	V,1.	

Fig. 168, No. 6 Moulded bead of interlocking chain design, Persian green. No. 669, NVS, D, 1a. (VI).

No. 7 Truncated barrel of Persian green glass with a pale white glass band affixed around the maximum circumference. No. 1336, NVS, B, 3. (V).

No. 8 Onion shaped bead of emerald green glass, wire-wound. No. 921, NVS, A, 2. (V).

No. 9 Truncated bicone, as above. No. 1890, NVS, H, 1a. (VI).

E. Red glass beads (Fig. 168)

Fifty-seven beads of Indian red glass were found. Some of these show bubbly surfaces and are brilliant red. They are of copper glass. Some beads show dark brown core and a coating of Indian red glass.

Tablet:	IV,1; V,1.	Period IV,12; V,32. VI,13.
Tubular:	IV,2; V,9, VI,2.	
Globular:	IV,1; VI,1.	
Short biconical:	IV,1; VI,2.	
Short truncated barrel:	IV,3; V,4; VI,2.	
Short cylinder:	V,10; VI,4.	
Tiny globular:	IV,1; V,2.	
Collared barrel:	IV,1; VI,1.	
Collared tablet barrel:	IV,2; V,5; VI,2.	
Cylinder disc:	V,1.	

Fig. 168, No. 10 Tubular bead, cane glass. No. 1080, NVS, E, 2. (V).

No. 11 Collared barrel of Indian red glass with a horizontal white glass band fused. No. 377, NVS, X, 1. (VI).

Chocolate coloured glass bead

Globular, Period VI, 1; Core of turquoise blue glass, exterior of raw amber glass.

Pomegranate coloured glass bead

Very short truncated barrel: Period IV, 1.

Snuffy-brown coloured glass bead

Collared barrel: Period V,1.

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F. Grey glass beads

Two beads of grey glass were found. Both belong to Period V. One is segmented (two segments) and the other is tablet shaped.

G. Blue glass beads (Fig. 168)

Blue glass beads represent the second biggest group in glass beads. Various shades in blue are available. Moreover, various techniques such as moulding, gadrooning, fusing of different coloured bands, wire-winding, etc. seem to have been adopted in the making of these beads.

(*a*)	*Ultramarine:*		
	Very short cylinder:	V,10	Period IV,1; V,24; VI,9.
	Tablet:	V,1.	
	Collared cylinder:	V,1.	
	Segmented:	V,1.	
	Gadrooned globular:	V,1; VI,1.	
	Square cylinder:	IV,1; V,2; VI,1.	
	Lug collared barrel:	V,1.	
	Flat barrel:	V,1.	
	Tiny globular:	V.1.	
	Cylinder disc:	V,1; VI,2.	
	Irregularly circular:	V,3.	
(*b*)	*Turquoise blue:*		
	Tiny globular:	V,7.	Period V,8; VI,2.
	Globular:	V,1; VI,1.	
	Short cylinder:	VI,1.	
(*c*)	*Cobalt blue:*		
	Gadrooned short cylinder:	IV,1.	Period, IV1; V,1.
	Gadrooned short barrel:	V,1.	
(*d*)	*Persian blue:*		
	Tiny circular:	IV,1.	Period IV,2; V,18; VI,8; Surface, 1.
	Globular:	V,7; VI,2.	
	Cylinder disc:	V,1; VI,2.	
	Hexagonal bicone:	V,3.	
	Collared short barrel:	V,1; VI,1; Surface 1.	
	Short truncated barrel:	V,2.	
	Collared tablet barrel:	V,1.	
	Short barrel:	V,1; VI,1.	
	Tubular:	VI,1.	
	Segmented:	VI,1.	
	Segmented gadrooned:	V,1.	

Fig. 168, No. 12 Segmented and gadrooned bead of ultramarine glass, moulded. No. 1497, NVS, A, 3. (V).

No. 13 Gadrooned cylinder, ultramarine, No. 1549, NVS, A, 3. (V).

No. 14 Square cylinder of ultramarine glass with white opaque glass bands affixed when the bead was in a semi-molten state. No. 686, NVS, A, 1a. (VI).

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No. 15 Square cylinder of ultramarine glass with a pressed zigzag white band in the centre, diamond facetted surfaces. No. 3233, NVS, F, 4. (V).

No. 16 Gadrooned short barrel possibly with collars, cobalt blue. No. 1597, NVS, A, 3. (V).

No. 17 Globular bead of Persian blue glass with thin white lines. No. 689, NVS, A, 2. (V).

H. Yellow glass beads (Fig. 168)

Yellow glass beads represent the third biggest group in glass beads.

(*a*) *Lemon yellow*		
Tubular:	VI,1.	Period IV,1; V,33; VI,12.
Collared tablet barrel:	V,4.	
Globular:	IV,1; V,8; VI,1.	
Annular:	VI,1.	
Tiny circular:	V,17; VI,5.	
Disc:	V,3; VI,2.	
Short cylinder:	V,3; VI,2.	
Truncated barrel:	V,1.	
(*b*) *Yellowish green*		
Tiny circular:	V,1.	Period V,2.
Flat collared barrel:	V,1.	
(*c*) *Yellow ochre*		
Tubular:	V,1.	
(*d*) *Buff lemon*		
Short truncated barrel:	IV,1; V,2.	Period IV,4; V,2; VI,1.
Collared tablet:	IV,1; V,1;	
Tubular:	VI,1.	
(*e*) *Raw sienna*		
Collared tablet barrel:	IV,1; V,1.	
(*f*) *Chrome yellow*		
Globular:	VI,1.	
(*g*) *Gambose yellow*		
Tiny circular:	V,1.	Period IV,1; V,2.
Tablet:	VI,1.	
Short truncated barrel:	V,1.	

Fig. 168, No. 18 Collared tablet barrel of lemon yellow glass. No. 1628, NVS, C, 4. (V).

No. 19 Truncated barrel of lemon yellow glass, folded glass. No. 5962, Y, 1. (VI).

No. 20 Half of an annular bead of lemon yellow glass. No. 1197, NVS, Y, 1. (VI).

I. White glass beads (Fig. 168)

Eight beads of white glass were found. The most remarkable of these is the bead of variously coloured bands of glass fused together with white.

Disc cylinder:	VI,1.	Period V,3. VI,5.
Globular:	V,1; VI,1.	
Tiny spherical:	VI,3.	
Disc:	V,1.	
Square barrel:	V,1.	

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Fig. 168, No. 21 Cylinder disc of light bluish white core with principally vertical bands of white, Indian red and emerald green glass. No. 567, NVS, A, 1a. (VI).

No. 22 Small square barrel with incised collars, transparent white glass. No. 2020, NVS, C, 4. (V).

J. Purple glass bead (Fig. 168)

A single specimen was found.

Fig. 168, No. 23 Lug collared barrel bead of purple glass, moulded, surfaces crackled. No. 1384, NVS, A, 3. (V).

Jasper (Fig. 168)

Of the nineteen jasper beads, seventeen are of red jasper. Some show flake scars and some are partially perforated. It is likely that they were made locally.

Globular:	IV,3; V,1.	Period, III,1; IV,13; V,5.
Spherical:	IV,3; V,2.	
Long barrel:	IV,2.	
Short barrel:	IV,2; V,1.	
Drop pendent:	IV,1.	
Short biconical:	IV,1.	
Tiny circular:	IV,1.	
Tiny disc:	V,1.	
Flat barrel:	III,1.	

Fig. 168, No. 24 A short barrel of red jasper showing horizontal shallow flutings, half perforated. No. 2857, NVS, I, 3. (IV).

No. 25 Drop pendent of red jasper. No. 2298, NVS, C, 9. (IV).

No. 26 Flat barrel of green jasper bored from both ends with a tapering borer as evidenced by the section of the perforation, partly polished. No. 3815, NVS, C, 11. (III).

Lapis Lazuli (Fig. 169)

Lapis is represented by four beads. These show the use of inferior quality of the material. The surfaces are soiled blue with dull white specks.

Square cylinder:	IV,1.	IV,2; V,1; Surface, 1.
Flat rectangular barrel:	Surface, 1.	
Tablet:	IV,1.	
Irregular square barrel:	V,1.	

Fig. 169, No. 1 A flat rectangular barrel bead. No. 1704, NVS, Surface.

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Opal (Fig. 169)

Of the two beads, one is a button bead and the other globular. Both belong to Period V.

Fig. 169, No. 2 A plano-convex button-like bead of opal with a truncated face. No. 1871, NVS, E, 3. (V).

Shell (Fig. 169)

Shell seems to have been used for beads as well as for bangles. Scores of pieces of cut shell were found indicating the existence of a local industry.

Globular:	IV,2; V,55; VI,2.	Period III,3; IV,29; V,113; VI,9
Spacer beads:	V,4.	
Annular:	V,1.	
Perforated shells:	III,2: IV,1; V,4.	
Pendents:	V,2.	
Toggle beads:	IV,2.	
Tablet:	IV,8; V,12; VI,2.	
Collared tablet barrel:	IV,2.	
Short cylinder:	IV,4; V,18.	
Short irregular truncated barrel:	III,1; IV,4; V,14; VI,5.	
Small barrel:	V,2.	
Flat barrel:	IV,1.	
Big barrel:	IV,1.	

Fig. 169, No. 3 Spacer bead, rectangular, one end bevelled to a point, two perforations at the opposite end. No. 1399, NVS, D, 3. (V).

No. 4 As above but three perforations, grooved top and pointed end. No. 761, NVS, F, 2. (V).

No. 5 Tooth pendent, slightly curved, tapering top flat and truncated, on one surface three incised dots possibly for inlay, breadthwise perforation—eye amulet? No. 5288, NVS, H, 5. (V).

No. 6 Crescent-shaped toggle bead with a breadthwise perforation in the centre. No. 2859, NVS, I, 3. (IV).

No. 7 A big tablet-like piece cut from a shell, slightly concavo-convex, interior polished, exterior rough. No. 5295, NVS, H, 5. (V).

No. 8 Collared tablet barrel from a thin shell piece. No. 6462, NVS, G, 9. (IV).

No. 9 Short truncated barrel of shell with concave ends, polished. No. 1565, NVS, X, 3. (IV).

No. 10 A big perfect barrel. No. 2735, NVS, A, 10. (IV).

No. 11 A pendent of the outline of a human figure with several incised circles on the outer surface possibly for inlay. No. 1079, NVS, E, 2. (V).

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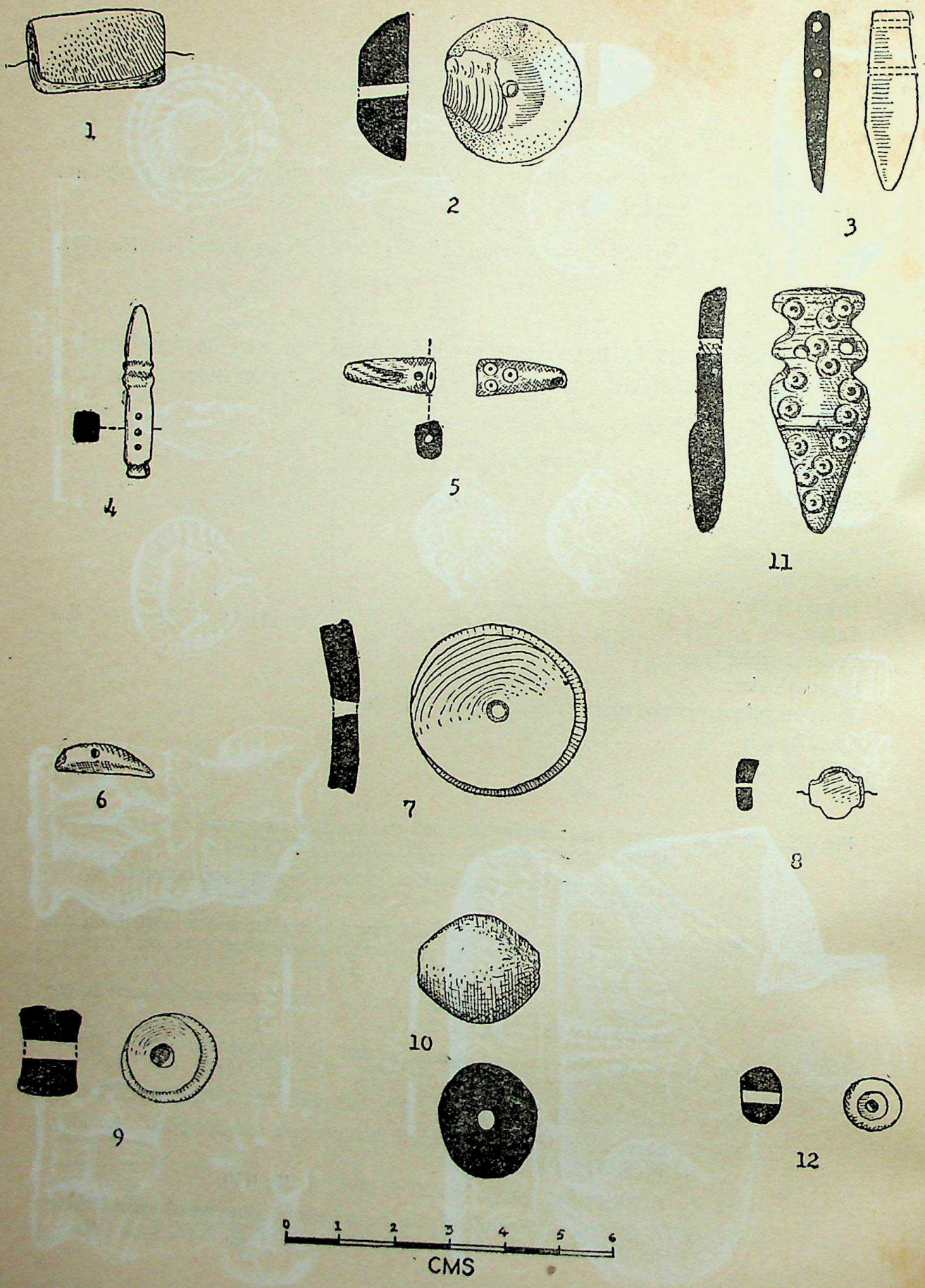

Fig. 169 : Beads [1/1] : Lapis (1), Opal (2), Shell (3-11), Soapstone (12). (See pp. 360-361, 366).

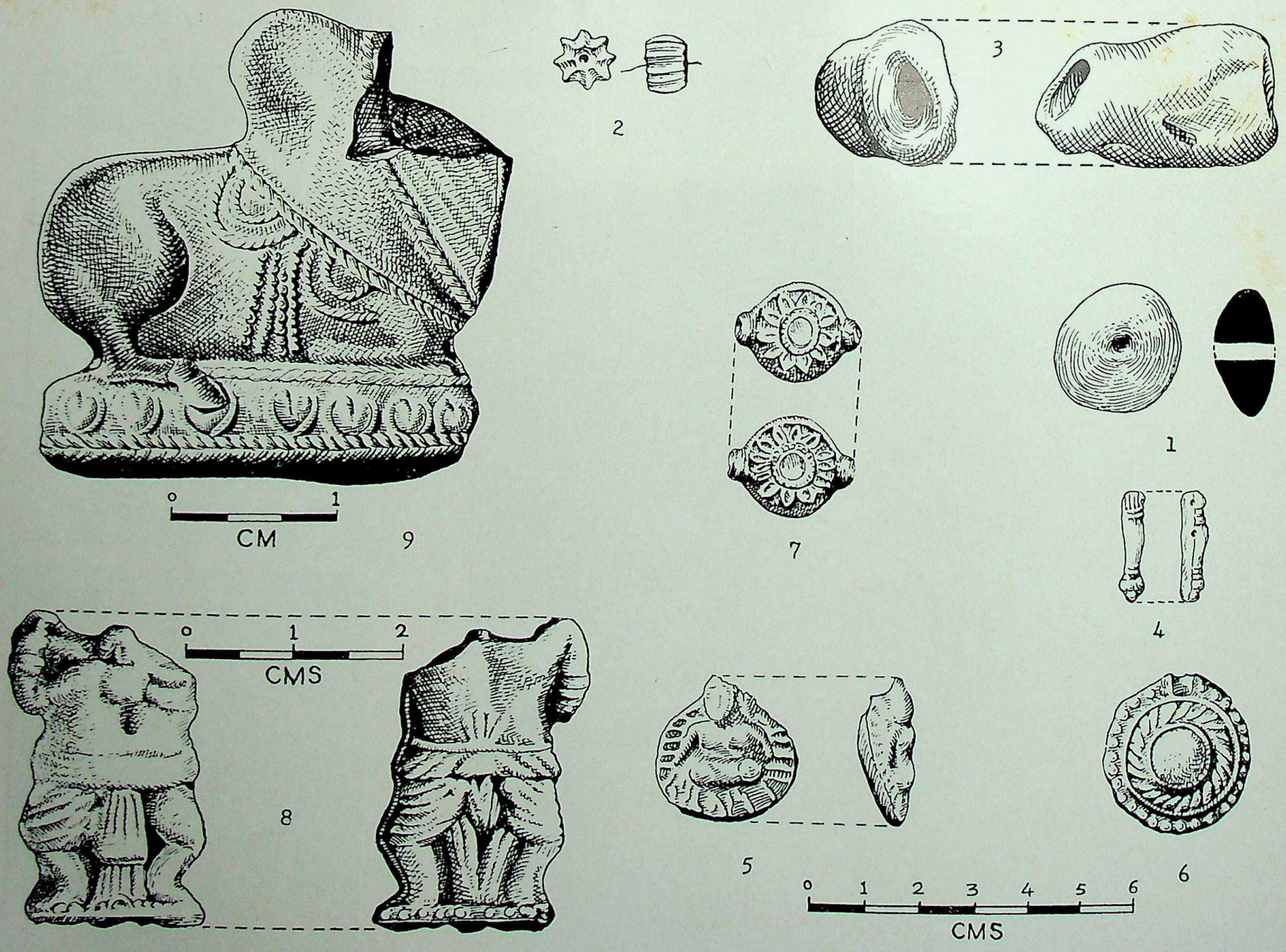

Fig. 170 : Beads and Amulets [1/1] : Terracotta (1-9). (See pp. 366-367).

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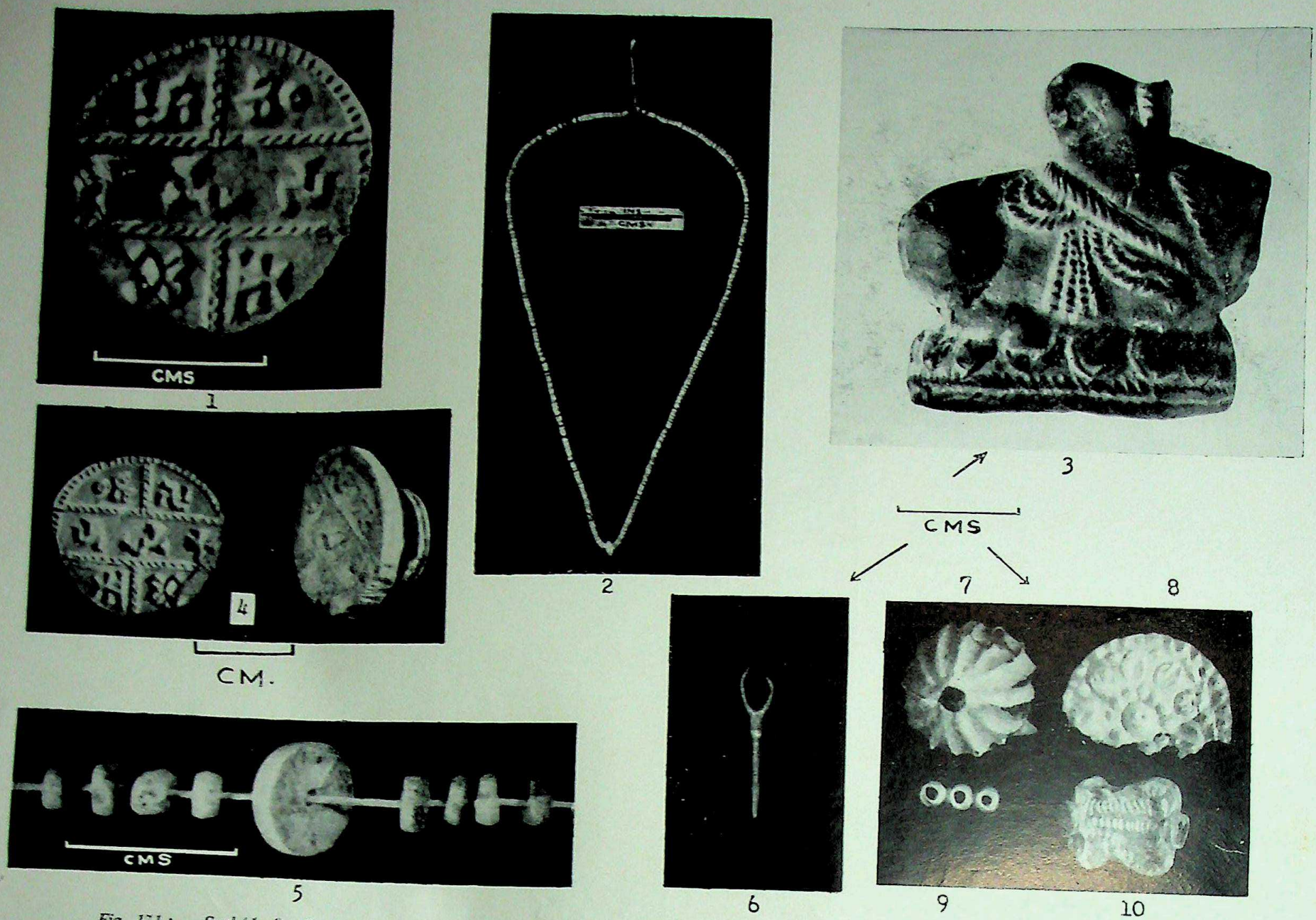

Fig. 171 : *Seal (1, 4) ; Steatite beads (2, 5) ; Nandi amulet (3) ; Gold beads and other objects (6-10).* *(See pp. 202, 366-367; 423-424).*

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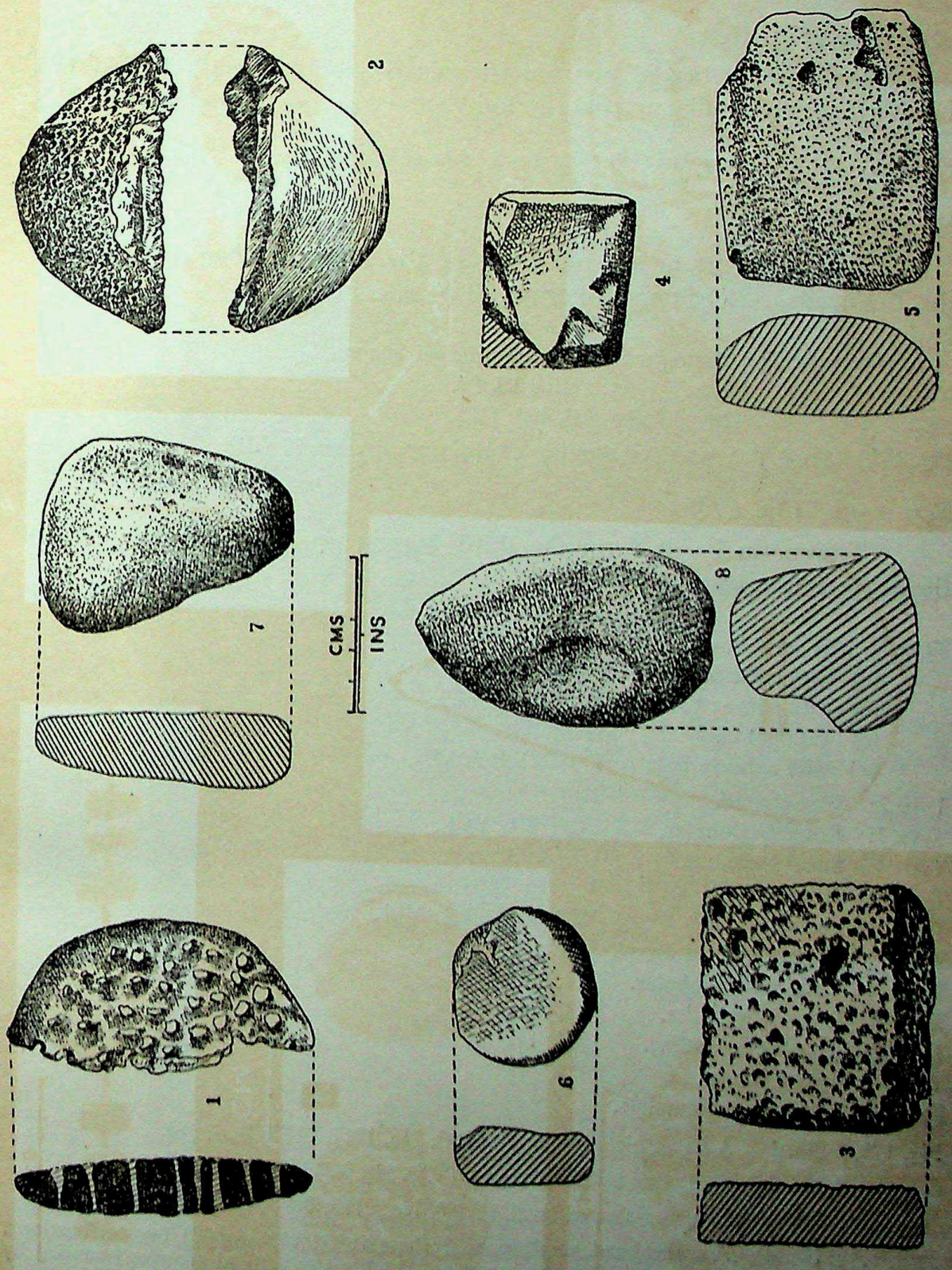

Fig. 172 : Terracotta Objects [1/2]. Skin-rubbers (1-8). (See p. 376).

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Soapstone (Fig. 169)

Of the four beads, two are irregularly globular (both Period IV), one is irregularly circular and flat (Period V) and one short cylinder (Period V).

Fig. 169, No. 12 Irregularly globular bead, slate-coloured. No. 7543, NVS, E, 7. (IV).

Steatite (*Fig. 171*)

Steatite forms nearly one-third of the total number of beads. Of the 559 beads, 554 belong to Period III (Chalcolithic).

These resolve themselves into two principal shapes.

Disc : Period III, 90.

Tiny globular: III, 464; IV,5.

Fig. 171, No. 2 A necklace showing mostly tiny disc beads. (III).

Terracotta (Fig. 170)

Terracotta beads form the third biggest group. More than half of these are arecanut-shaped.

Type 1: Arecanut beads

(*a*) with collared base V,21; VI,3.
(*b*) with convex base IV,2; V,22; VI,5.
(*c*) with flat base IV,9; V,15.
(*d*) with concave base IV,17; V,113; VI,7.

Type 2: Vase-shaped. IV,1.
Type 3: Roughly globular. IV,6; V,1; VI-1.
Type 4: Squat biconical. III,1; V,1.
Type 5: Tubular. V,1.
Type 6: Barrel. III,1; IV,1; V,1; VI,1.
Type 7: Short truncated barrel. V,1.
Type 8: Gadrooned globular. V,1.
Type 9: Irregular cylinder. V,1.
Type 10: Irregular in outline. III,1; IV,1.
Type 11: Spacer beads. IV,2.
Type 12: Pendents and amulets.

Fig. 170, No. 1 A squat biconical bead. (T.4). No. 1811, NVS, B, 4. (V).

No. 2 Gadrooned globular bead. (T.8). No. 4049, NVS, G, 4. (V).

No. 3 Irregular-shaped bead. (T.10). No. 2187, NVS, I, 6. (III).

No. 4 A spacer bead, single mould (others with double mould), two perforations, dots in relief at the lower end, at the top vertical grooves bounded by horizontal grooves, pillar shaped. No. 3273, NVS, Y, 3. (IV).

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No. 5 A circular piece, amulet, single mould, the facing surface showing possibly a figure in relief sitting with folded knees, facial features blurred, radiating lines all around, perforation at the back of the neck. No. 3736, NVS, D, 1a. (VI).

No. 6 Pendent, double-convex in outline, one surface with dots and rope design, knob in relief, vertical perforation. No. 2907, NVS, E, 4. (V).

No. 7 Flat collared barrel, double-mould, rosette-design in relief on both the surfaces. No. 1864, NVS, C, 5. (V).

No. 8 A standing human figure with the head broken, perforated through the shoulders and neck, figure wearing a *dhoti* with ends hanging, legs slightly bent, lose *bunian*-like garment covering the body, hands folded and holding a round object over the belly, navel shown by a depression, armlets on arms, pendent on the chest, reverse showing back covered by a loose bunian or shirt, amulet. No. 2687, NVS, D, 5. (V). (*Fig. 181, No. 7.*)

No. 9 A *nandi* amulet, head and face broken, prominent humps, sitting on a row of lotuses, bounded by rope design, double mould, perforation horizontal and running through below the body, necklaces and garlands below the hump. No. 1333, NVS, B, 1. (VI). (*Fig. 171, No. 3*)

Notable features of the bead-industry at Nevasa

The detailed survey of the beads of various materials at Nevasa brings out a few features which may be noted briefly.

Nevasa: A bead-making site

Among the sixteen hundred and odd beads that have been found, some are in an unfinished stage. For instance, the half perforated beads of amazonite (Fig. 165, No. 14), several incompletely perforated beads of agate, (Fig. 165, No. 12), the pear-shaped bead of carnelian showing traces of filing on a lathe (Fig. 166, No. 7) and some unperforated long tubular nodules of coral indicate that some of the beads were possibly locally made. Though evidence of all the stages of manufacture of beads of semi-precious stones was not available, these incomplete specimens indicate such a possibility. This possibility becomes almost a certainty in the case of glass beads as they were found along with scores of pieces of glass slags, incomplete bangle pieces and hundreds of monochrome and polychrome bangles. Taken as a whole, therefore, it may not be incorrect to hold that Nevasa was a bead-making site at least in Periods V and VI.

Materials

The total number of beads and as many as seventeen categories of materials speak for the extensive and varied use of beads as a decorative

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item of possibly everyday use. Right from terracotta to opal all material locally available in the Deccan area has been used by the bead makers of Nevasa.

The earliest settlers seem to have preferred steatite as a decorative material to all the rest. This is as it should be, for steatite[2] and faience were the most favourite materials all over the Chalcolithic sites in India. Regarding the latter, however, the case is different at Nevasa. As at Taxila, the beads of faience—especially the gadrooned and collared variety—come to prominence in the early centuries of the christian era only.

However, this absence of faience beads is compensated by the presence of agate, microcline or amazonite and terracotta beads in Period III. The shapes of these beads are well-known and there is nothing new in them. However, it is remarkable to note how the settlers of Period III could manufacture and perforate such beads. The tools for such an execution have not survived. But the very presence of such beads of neat workmanship imply the use of fine drills and flaking tools.

Another point worth notice is that some of the beads of Period III—especially those of agate, microcline and red glazed faience—were found in the urn-burials containing the skeletons of young children. It thus becomes apparent that beads formed a part of the grave-goods during the Chalcolithic period at Nevasa.

Period IV saw the use of varied material for bead-making. The preceding period's bead industry was restricted only to eight types of materials, whereas in the early historic or Period IV, nine new materials were added to this essentially decorative industry. Terracotta, glass, carnelian and shell took the major share in this. Besides the easily available material such as carnelian from Gujarat, jasper and bloodstone from veins in the Deccan, non-indigenous material like lapis also contributed to the making up of beads. Evidently it was imported from outside India.

The Indo-Roman or Period V saw the climax of the bead industry at Nevasa. Here we have a different picture from that of Period IV. The natural material like semi-precious stones seems to fall to the background and artificial material like faience and glass comes to the forefront. Along

2. Dr. LAL, however, has pointed out that some beads are of chalk and not of steatite. A thorough analysis of steatite beads from other sites is a necessity now.

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with the varied range of coloured glass beads of indigenous make, two specimens of the finest, polished and pure transparent blue Roman glass stand out distinct in this group.

The Muslim-Maratha (Period VI) again shows the decline in the art of bead-making. Agate, carnelian, glass and terracotta are the materials used, and the number of beads also lessens considerably. This goes well with the general decadence in the standard of life of the people of this period as evidenced by the associated finds. The only notable beads of this period are the globular banded agate beads popularly known as 'sulemānī beads' and used by the Islamic fakirs.

Techniques

From the point of view of the study of different techniques of bead-making, the Nevasa collection offers a reasonably good field.

It has already been noted that the earliest beads at Nevasa are those of steatite. These are tiny discs or short cylinders. The presence of these along with segmented and segment-marked tubes indicates that the disc beads were produced by cutting the segmented cylinders or tubes. As to the other beads, agate, amazonite and other semi-precious stones, fine drills must have been used to perforate them. This is evidenced by some of the half-perforated beads of amazonite.

The red glazed faience beads are tiny globes in shape. These seem to have been very dexterously coated by a shining red glaze which in some cases having been worn out, exposes the reddish core of the bead.

The glass beads of Period V reveal a variety of techniques. We have wire wound black glass beads, beads with intervening gold-foil in two layers of glass, composite glass beads with yellow matrix and green glass coating (Fig. 168, No. 1), moulded beads of glass (Fig. 168, No. 6), eye beads with white dots fused to blackish glass (Fig. 168, No. 3), and beads of copper glass. A few beads of cane glass are also available in this period. Besides this, the technique of fusing together bands of differently coloured glass is also seen in some cases. These techniques reveal the mastery over the art of glass making which the Nevasa artisan of the early centuries of the Christian era had attained.

Besides this technological skill, the artistic eye of the craftman is also revealed in the variety of shapes and the choice of coloured glass.

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Regarding the former we shall deal in detail subsequently. The latter shows the use of as many as nine colours with the beautiful range of shades in them. Right from the brilliant red of the copper glass, we have the pure white of transparent glass. However, green is represented by the largest number of beads; blue and yellow coming next in frequency.

The faience beads of this period also deserve mention. Most of these are either collared or gadrooned. The former show two varieties—lug-collared and groove-collared. The latter are more abundant. Similar beads have been reported in this and other materials from Kausambi,[3] Ter,[4] Karad,[5] Kolhapur[6] and other sites. Ample evidence regarding the gadrooned variety comes from Taxila[7] where they are most common in the Saka-Parthian levels. The Nevasa evidence falls in line with that from other sites, so far as the date of these beads is concerned.

Shapes and Parallels

The shapes of several beads from Nevasa have parallels from other sites which may be briefly noted here.

The triangular barrel beads of agate (Fig. 165, No. 8), amethyst (Fig. 165, No. 16), and possibly copper is an important and rare shape. At Nevasa its antiquity goes to Period III, but later (1st-2nd century A.D.) specimens come from Kausambi[8], Ahichchhatra,[9] Taxila,[10] Tripuri,[11] Kondapur,[12] Arikamedu and Bahal.[13]

The granulated faience bead (Fig. 167, No. 4) has its exact parallel in the collection of Shri Jineshwar Das of Allahabad, which, however, is a surface collection from Kosam. Though ranging between 700 to 400 B.C.

3. Information from Shri G. R. Sharma. Also personal collection of Shri Jineshwar Das from Allahabad.
4. Information kindly supplied by Dr. B. N. Chapekar.
5. Dikshit, M. G., *Exc. at Karad*, Section on beads.
6. Sankalia, H.D. and Dikshit, M.G., *Excavations at Brahmapuri (Kolhapur)*, p. 104.
7. Marshall, *Taxila*, II, p. 651.
8. Kausambi, Collection of Shri Jineshwar Das, and specimens from Allahabad Municipal Museum.
9. *A.I.*, No. 8, Fig. 1, No. 23; 2, No. 50.
10. Beck, *MASI*, No. 65, pl. I, Nos. I, 18, etc.
11. Dikshit, M.G., *Tripuri—1952*, (Not illustrated).
12. Dikshit, M.G., *Beads from Kondapur*, pl. I, No. 18.
13. Information from Superintendent, S. W. Circle, Deptt. of Archaeology.

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in Palestine, Egypt and Greece,[14] the granulated beads in India appear only after the beginning of the Christian era, elaborate and better specimens being reported from Sirkap.[15] The Nevasa specimen also falls in the same period.

The gadrooned group of faience beads belonging to the Indo-Roman levels at Nevasa has its counterpart in the same material from Sirkap, Charsadda,[16] Chandravalli,[17] Kondapur and Paithan. It may be noted that faience as a material for bead-making is not known so far in the Mauryan levels anywhere in India. It is only in the early centuries of the Christian era that we have them in abundance. Could it be that they were introduced into India through western contact for which this period is well-known ?

The lug and groove-collared beads of faience are also important. The collared beads have been a patent shape in India, its occurrence being known so far from Mohenjodaro, Chandravalli, Kondapur, Maski, Sisupalgarh, Kosam, Pataliputra, Vaisali,[18] Nasik, Kolhapur, Ter, Bahal and Daimabad. However, at Taxila the evidence showed the priority of the groove-collared over the lug-collared variety even though some beads of the latter variety came from the Bhir mound. At Nevasa both these varieties are comptemporary and in practically equal quantity.

Some of the well-known types in glass occur at Nevasa. For instance, the bead with yellow matrix (Fig. 168, No. 1) occurs at Kolhapur, Nasik, Kondapur, Karad and Ter in the Satavahana levels, whereas it is a bit late at Nevasa. Unstratified specimens from Kosambi but probably assignable to the early historic period are exhibited in the Municipal Museum at Allahabad. As the evidence stands, therefore, Nevasa indicates a longer existence of this type. Similar is the case of glass bead with a gold foil which has its exact counterparts from all these sites mentioned above.

The moulded chain bead of green glass (Fig. 168, No. 6) is rather unique. Paithan seems to have been the second site which is said to have yielded such a bead. As, however, it has not been illustrated anywhere so far, it cannot be compared with the Nevasa specimen.

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14. Beck, *Archaeologia*, Vol. 77, p. 27, Fig. 23.
15. Beck, *MASI*, No. 65, pl. X, No. 7.
16. *ASI, AR.*, 1902-03, pl. XXVIII, b, 2.
17. Mysore Museum,
18. Information kindly supplied by the late Dr. A. S. Altekar.

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The beads of copper glass from Nevasa have parallels in technique from Maheshwar and several sites in the Deccan like Kolhapur[19] and others. A larger collection comes from Arikamedu,[20] while Chetput[21] and Tinevelly also report these beads. The Nevasa group is the earliest amongst these. Outside India, Rhodesia is the greatest centre for such beads.[22]

The coral beads from Nevasa have nothing distinct about them. As a whole coral beads are few in India. The finest *triratna* beads of coral come from Nagarijunikonda and Kosambi.[23]

The globular beads of banded agate termed 'sulemānī' occur over a wide area in India. The largest collection of such beads comes from Kosam belonging, however, to early historic period. The Nevasa specimens coming from the Muslim-Maratha levels indicate their later limit.

Similar is the case with the eye-bead (Fig. 168, No. 3). Eye beads have a wide occurrence,[24] the earliest specimen coming from Taxila datable to about the 4th century B.C. The Nevasa specimen is more than a thousand years later than this and is made of glass. The use of such an eye bead shows the prevalence of the superstition about the evil eye current even now in India.

The toggle beads of shell (Fig. 169, No. 6) assignable to about 2nd-1st century B.C. at Nevasa is a rare shape. So far Ahichchhatra,[25] Kosam,[26] Kondapur, Arikamedu[27] and Navdatoli[28] have given such beads. At the first site it has not been clearly dated whereas at the second site they are surface collections. At Arikamedu it belongs to post-Arretine levels. At Navdatoli, toggle beads of blue glazed faience belong to the pre-1000 B.C. Chalcolithic levels. Thus Nevasa toggle beads are the earliest so far as the historical period is concerned.

19. SANKALIA and DIKSHIT, *op. cit.*, pp.108-109.
20. Surface collection, Deccan College Archaeological Museum.
21. CAMMAIDE, *IA*, LXI (1932), p. 22.
22. Received by the author from Dr. Van der SLEEN.
23. Allahabad Municipal Museum.
24. For details, see BECK, *op. cit.*, pp. 5 ff; They are reported from Bahal, Kolhapur, Besnagar, Arikamedu, Sisupalgarh, Kosambi, Lothal, Ratnagiri, Rajghat and Ahichchhatra.
25. *A.I.*, No. 8, Fig. 4, No. 91.
26. Coll. of Jineshwar DAS. (Carnelian).
27. *A.I.*, No. 2, Fig. 41, No. 39.
28. Found in 1958-59 excavations.

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BEADS, PENDANTS AND AMULETS

The set of three copper beads of biconical shape (*Fig. 185, No. 6*) coming from the levels of Period III is unique as so far no Chalcolithic site in India has reported beads of such a shape in copper.

Of the gold beads, the Naga-hood beads deserves special mention. Beads of similar outline but with the 'Śrīvatsa' motif are reported from Kondapur[29] in terracotta assignable to the Satavahana period. The Nevasa specimen, though similar in outline, is distinctly a serpent-bead which depicts the vertebra minutely and clearly.

Pendants

Three types of pendants:—dagger, drop and tooth—were found at Nevasa. The first two are of very wide occurrence and have been reported from Ahichchhatra, Arikamedu, Cambay, Kosam, Kondapur, Maheshwar Maski, Nasik, Vaisali and Taxila. Their occurrence starts from the Mauryan levels. The Nevasa specimens also belong to the same Period.

The tooth pendant (Fig. 169, No. 5) with three incised dots and another (Fig. 169, No. 11) of the outline of a human figure with several incised circles are distinctly new. The circles were made for inlay and the entire idea of such pendants was probably amuletic implying connection with some eye-goddess. In this connection it may be recalled that Ujjain[30] and Somanath[31] have also yielded pieces of ivory cut to human shape with incised circles. At both these places they are earlier while at Nevasa they belong to early centuries of the Christian era. Similarly incised figures are reported from Chandraketugrah,[32] Sonepur[33] and Sravasti.[34]

Spacers

Two types of spacer beads from Nevasa are noteworthy. One is of faience, clamp-like in shape and has two perforations. It is not known how this was used, and the author has not seen any parallel.

The other is a small pillar-like pendant of terracotta prepared out of double-mould. Exactly similar spacers are reported from Ujjain,[35]

29. DIKSHIT, *op. cit.*, pl. V, No. 220.
30. *I.A.R.*, 1956-57, p. 23, Fig. 11.
31. *Ibid.*, pl. VIII, B, No. 5.
32. *Ibid.*, 1957-58, pl. LXXIII, A.
33. *Ibid.*, 1956-57, pl. XXV, A.
34. *Ibid.*, 1958-59, pl. LXI, A.
35. Information kindly supplied by Shri N. R. BANERJI.

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Kolhapur,[36] Karad,[37] Tripuri[38] and Kondapur.[39] At all these sites, these are reported from the early historical levels. The Nevasa specimen also falls in line with these in typology and date.

Amulets

Besides the pendants which might have amuletic value described above, two other specimens deserve mention.

The first of these is the *yaksha* amulet (Fig. 170, No. 8, *Fig. 181, No. 7*). This standing figure of a *yaksha* perforated through the shoulders and neck has remarkable affinity to the stone *yaksha* figures found at Pitalkhora and datable on palaeographical grounds to about the 2nd century B.C.[40] A Yaksha with similar facial expressions occurs in the rock-cut caves of the Udayagiri-Khandagiri caves also. Compared to these two specimens, the Nevasa specimen is later as it belongs to the Indo-Roman period, (though it is possible that it belongs to the earlier period). The Pitalkhora *yaksha* has been identified as *yaksha* '*sankari*' of the Buddhist literature. From such far-flung specimens, it may not be incorrect to presume that this *yaksha* was revered over a very long stretch of time.

The other amulet is the *Nandi* amulet. Executed in a double mould, the piece is exquisitely done, showing all the minute details of the lotus petals over which the sacred bull sits, the rows of decorative necklaces and the youthful, vigorous, plump contours of the body. Amulets of similar motif but cruder in execution are reported from Kondapur[41] where they are assigned to the Satavahana period. Another piece executed in gold and approaching the delicacy of the Nevasa specimen has been found at Vaisali.[42] It may not be wrong therefore to suggest that the Nandi-cult amulets were used in the Deccan in the early centuries prior to and at the beginning of the Christian era.

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36. SANKALIA and DIKSHIT, *op. cit.*, Pl. XXV-A, 2.
37. Information from Shri G. H. KHARE.
38. DIKSHIT, *op. cit.*, pl. XXXII, A., p. 95.
39. DIKSHIT, *op. cit.*, pl. V, No. 256.
40. *I.A.R.*, 1957-58, pl. LXXVII; also p. 65. Also M. N. DESHPANDE, The Rock-cut Caves of Pitalkhora in the Deccan, *A.I.*, No. 15, pp. 66 ff., Pl. LVI.
41. DIKSHIT, M.G., *op. cit.*, pl. VI, Nos. 264-73.
42. *I.A.R.*, 1958-59, pl. X, B.

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XI

TERRACOTTA AND KAOLIN OBJECTS

Terracotta Objects

A wide range of objects in terracotta could be had at Nevasa. It comprised skin-rubbers, lamps, wheels, terracotta figurines and toys.

These can be grouped into the following categories:

(1) Objects of toilet—skin-rubbers ;

(2) Objects of household use—lamps, crucibles, sharpeners, discs, stoppers, lids and covers, bowls, dabbers ;

(3) Objects of worship—votive tanks ;

(4) Objects of recreation—wheels, toys ;

(5) Ornamental objects—masks, decorated discs ;

(6) Terracotta figurines and boyheads, and

(7) Miscellaneous objects.

Skin Rubbers
(Fig.172)

Sixteen skin-rubbers were found. They occur right from the Chalcolithic (III) to the Indo-Roman (Period V) times.

Save two, all the rest have been made of terracotta. The two are pumice stones.

These rubbers can be grouped into the following types:

(*a*) perforated cake,
(*b*) oval shaped, possibly pinched hold, undersurface punctured,
(*c*) rectangular pieces with spongy surfaces,
(*d*) as above but without spongy surfaces and cut out of potsherds,
(*e*) plano-convex with the nether surface spongy,
(*f*) circular with roughened surfaces,
(*g*) irregular, light pumice stones.

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The periodwise distribution of these types is given in the table below.

Types	III	IV	V	VI	Surface	Total
a	1					1
b	2					2
c			3		1	4
d			2			2
e			1			1
f	1		2	1		4
g			2			2

The distribution shows that most of the rubbers were found in the layers of Period V. In Period III, three types of flesh rubbers were used; the rectangular pieces with spongy surfaces, so well-known from early historic horizon from several sites,[1] are conspicuous by their absence.

Besides the shapes, the technique of making skin-rubbers at Nevasa seems to have resolved itself into three main devices.

(*a*) puncturing the surface by short round shallow points,

(*b*) making close tiny holes so that the surface has an appearance of a sponge, and

(*c*) roughening the surface by fine silica or quartz.

First and third can be traced back to the Chalcolithic period.

The following are illustrated:

Fig. 172 No. 1 Half of a cake, perforated by means of a straw piece as the marks on the section show.[2] Diameter 96 mm. and maximum thickness 17 mm. No. 8304, NVS, F, 12. Period III. [Type a]

No. 2 Half of a skin-rubber with the nether surface punctured, ovally outline, traces of a punched hole on the upper surface. Maximum diameter 90 mm. No. 7097, NVS, E, 14. Period III. [Type b].

No. 3 A complete piece, rectangular in section, surfaces punctured and spongy.[3] Length 79 mm., breadth 68 mm. and thickness 21 mm. No. 479, NVS, E, 5. Period V. [Type c].

No. 4 Almost complete piece, sides ground after cutting out of a potsherd, traces of a red slip on the smooth outer surface; under surface rough. Length 54 mm., breadth 47 mm. and thickness 27 mm. No. 1737, NVS, D, 4. Period V. [Type d].

No. 5 Almost complete specimen, plano-convex, nether surface spongy. Length 90 mm., breadth 65 mm. and maximum thickness 32 mm. No. 7716, NVS, H, 3. Period V. [Type e].

No. 6 Intact circular piece, one surface roughened by means of quartz and fine silica. Diameters 49 mm. and 45 mm. thickness 17 mm. No. 2360, NVS, C, 10. Period III. [Type f].

1. For antiquity, typology and distribution of skin-rubbers, see SANKALIA and DEO, *op. cit.*, pp. 11 ff; also SANKALIA, SUBBARAO and DEO, *op. cit.*, pp. 198-99.
2. Was it also used in covering a vessel with boiling water as in steam-cooking?
3. The smallest piece of this group measures, length 67, breadth 45, thickness 29 mm.; biggest length 86, breadth 74 and thickness 19 mm.

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No. 7 Irregularly triangular piece of pumice stone, slate-coloured, porous. No. 243, NVS, H, 3. Period V. [Type g].

No. 8 Irregular, plano-convex, as above, but very light and whitish. No. 2144, NVS, B, 5. Period V. [Type g].

LAMPS

(Figs. 173, 174)

Thirteen fragmentary and one complete specimens of terracotta lamps were found. These are either coarse red, or slipped and burnished red, or coarse or burnished grey. A majority of these are oval on plan and all show a shallow and long lengthwise wick-channel. All these are hand-made.

These lamps can be grouped into the following five categories:

(*a*) oval on plan with medium high walls and lengthwise shallow wick-channel;

(*b*) as above but with low walls and flat base,

(*c*) almond shaped, shallow, with a wick-channel,

(*d*) as 'b' but flared walls and probably a loop over the channel for holding the lamp, and

(*e*) a small shallow bowl with a pinched projection.

Since all the lamps are flat based, they could be kept anywhere. In several cases, the wick-channel tips are blackened showing that the specimens were used.

The existence of such broad lamps coupled with the evidence of floorings of gravel and clay as also of hydraulic lime mortar go well to establish the conclusion that the Nevasian Chalcolithic people led a fully settled life.

None of the Indus valley sites has reported so far such flat based oval shaped terracotta lamps. Actually, these sites have yielded exceptionally few lamps, and there is no unanimity about their designation.[4] The only specimen is a small, pedestalled bowl with three perforations possibly for hanging the lamp from Mohenjodaro.[5] Another crudely made pedestalled bowl with projected channel is too amateurish to be used as a lamp as

4. For lamps especially terracotta, see *MASI*, 37, pl. VII, PE, 3, for Periano Ghundai; Sirkap: MARSHALL, *Taxila*, II, pp. 421-22; *AI.*, No. 4, p. 63; Chandravalli, *AI.*, No. 4, p. 284; ARIKAMEDU, *AI.*, No. 2, pp. 60, 101; Tripuri, DIKSHIT, M.G., *op. cit.*, Fig. 30, No. 169; For Rangpur, Chanhudaro and Mohenjodaro, see below.

5. MACKAY, *FEM*, p. 192; pl. LX, No. 4.

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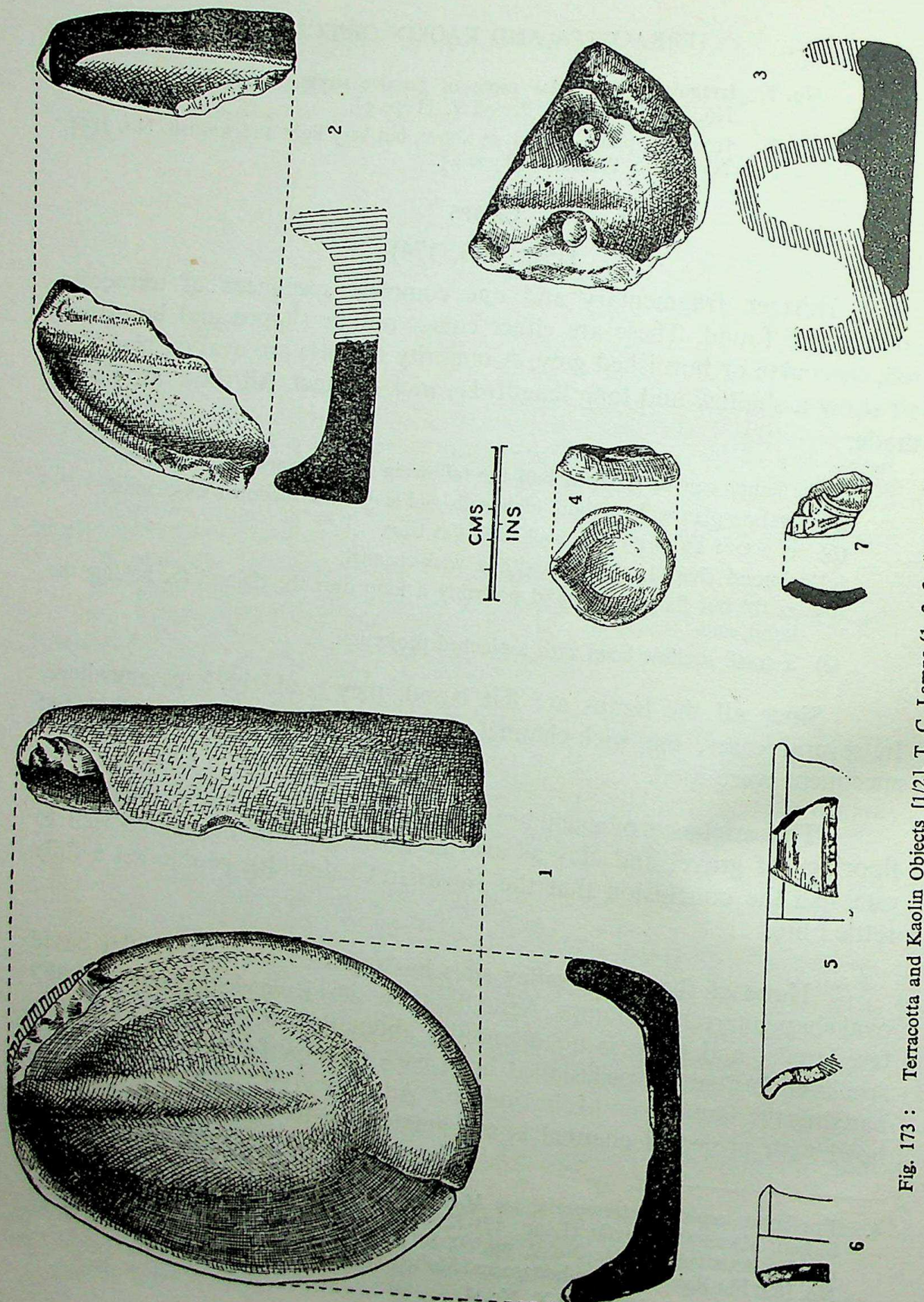

Fig. 173 : Terracotta and Kaolin Objects [1/2]. T. C. Lamps (1, 2, 3, 4) ; Kaolin potsherds (5-7). (See pp. 380, 407).

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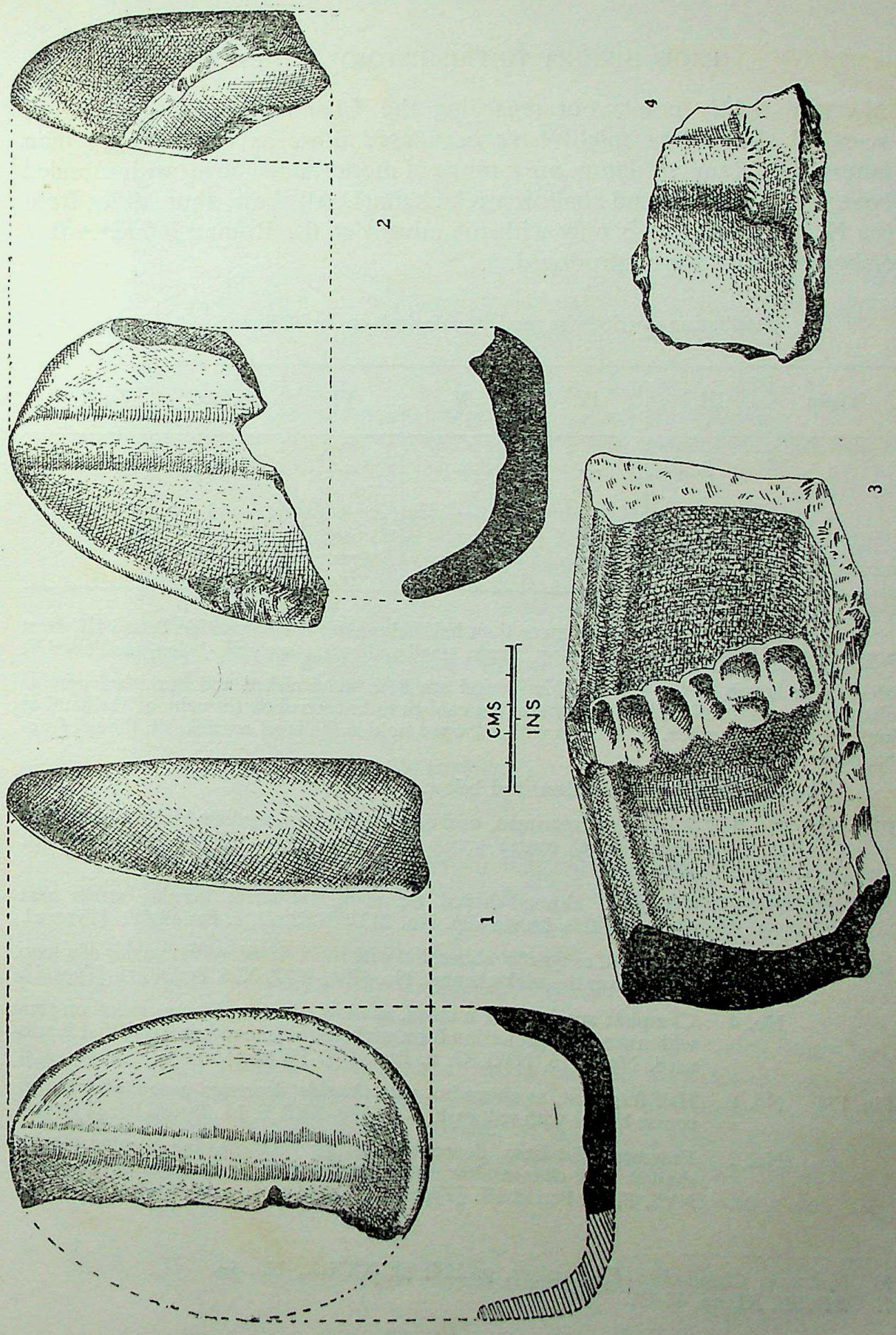

Fig. 174 : Terracotta Objects [1/2]. Lamps (1-2) ; Votive Tanks (3-4). (See pp. 380-381).

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MACKAY rightly points out regarding the Chanhudaro specimen.[6] The so-called shell lamps might have been used more as feeding cups than lamps. The Rangpur[7] lamps are a range of monotonous bowls with rounded base, incurved edge and shallow wick-channel. All these, thus, differ from the Nevasa lamps. It is only with the advent of the Roman influence that elaborate lamps were introduced.

The distribution—periodwise and typological—is as follows:

Types	III	IV	V	VI	Surface	Total
a	5	—	—	—	—	5
b	2	3	—	—	—	5
c	—	1	—	—	1	2
d	1	—	—	—	—	1
e	—	—	1	—	—	1

Of these, it may be noted, more than half belong to the Chalcolithic Period III. Next come those of Period IV, and the most simple, small and coarse specimen belongs to Period V.

The lamps of the Chalcolithic Period are both unburnished and burnished grey as also coarse and burnished red. They are big enough to be carried on the palm of the hand or kept on an even surface. The lamp with a looped hold is the most remarkable though fragmentary.

The illustrated lamps are described below.

Fig. 173 No. 1 A complete specimen, oval on plan, flat base, medium high walls, shallow wick-channel, coarse grey-brown. No. 7770a, NVS, E, 14. Period III. [Type a].

No. 2 Fragment, almond-shaped on plan, flat-based, burning marks near wick-end, thin brown slip. No. 2431, NVS, D, 7. Period IV. [Type c].

No. 3 Fragment, as type 'b' above, but with short flared walls, remains of a loop handle over the wick-channel. No. 4791, NVS, X, 5. Period III. [Type d].

No. 4 Complete specimen of a small, shallow, flat-based lamp, round on plan with a pinched projection for a wick, burning marks showing that it was used. No. 5116, NVS, G, 6. Period V. [Type e].

Fig. 174 No. 1 Half fragment, as above but with the side depressed near the wick-end, coarse brown with red wash. No. 7770, NVS, E, 14. Period III. [Type a].

No. 2 Fragment, flat base, depressed edge for wick showing burning marks, shallow wick-channel, low walls, grey-brown smooth surfaces. No. 8544, NVS, F, 13. Period III. [Type b].

6. MACKAY, *Chanhudaro Excavations*, p. 114; pl. XXXIX, No. 14.
7. *BDCRI*, XI, pp. 48-49.

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TERRACOTTA AND KAOLIN OBJECTS

VOTIVE TANKS

(Fig. 174)

Three fragmentary votive tanks were found. All the three belong to the layers of Period V.

Votive tanks have been reported from a number of sites in the North and Central India.[8] A few sites in the south also have yielded these. But Nevasa has been the first site in the Deccan to give these.

The three specimens can be resolved into two main types as follows:

(*a*) square or rectangular on plan with rounded corners and high walls,

(*b*) with thin walls, thick top with finger-tip depressions, complete shape not known.

Of these, the latter has been found at Maheshwar. It is not illustrated.

The specimens illustrated and belonging to the former category are the following.

Fig. 174 No. 3 Fragment, thick high walls with a flat top, rounded corners, possibly squarish or rectangular, six steps shown by depressions over an applique band in one corner, flat rough base, handmade, grey-brown surfaces. Thickness of walls 28 mm. height of walls 86 mm. No. 4200, NVS, F, 3. Period V. [Type a].

No. 4 Small fragment, less thick sides, one corner shows a pillar-like projection on a round base bearing incised dots, traces of a dark red slip, flat base. No. 892, NVS, I, 2. Period V. [Type a].

SHARPENERS

(Fig. 175)

Twenty-four potsherds ground to either oval, triangular or crescent-like shape were found. Twenty of these belong to the layers of Period III proper, while four come from the lowermost layers of the next period. Since, however, they are made out of pottery of Jorwe fabric, it is reasonable to assume that all belong to the Chalcolithic period (III).

The purpose of these pieces is not possible to ascertain. They have been tentatively termed " sharpeners " inasmuch as they are concave and might have been used for sharpening of points of copper objects so characteristic of the Chalcolithic period. However, it may be made clear here that none of these pieces show signs of use. Since they could easily be fashioned out of waste potsherds, they were possibly discarded after

8. For a discussion of the distribution, date and typology, see SANKALIA, SUBBARAO and DEO, *op. cit.*, p. 197. Recently, Ujjain and Nagarjunikonda have also yielded votive tanks.

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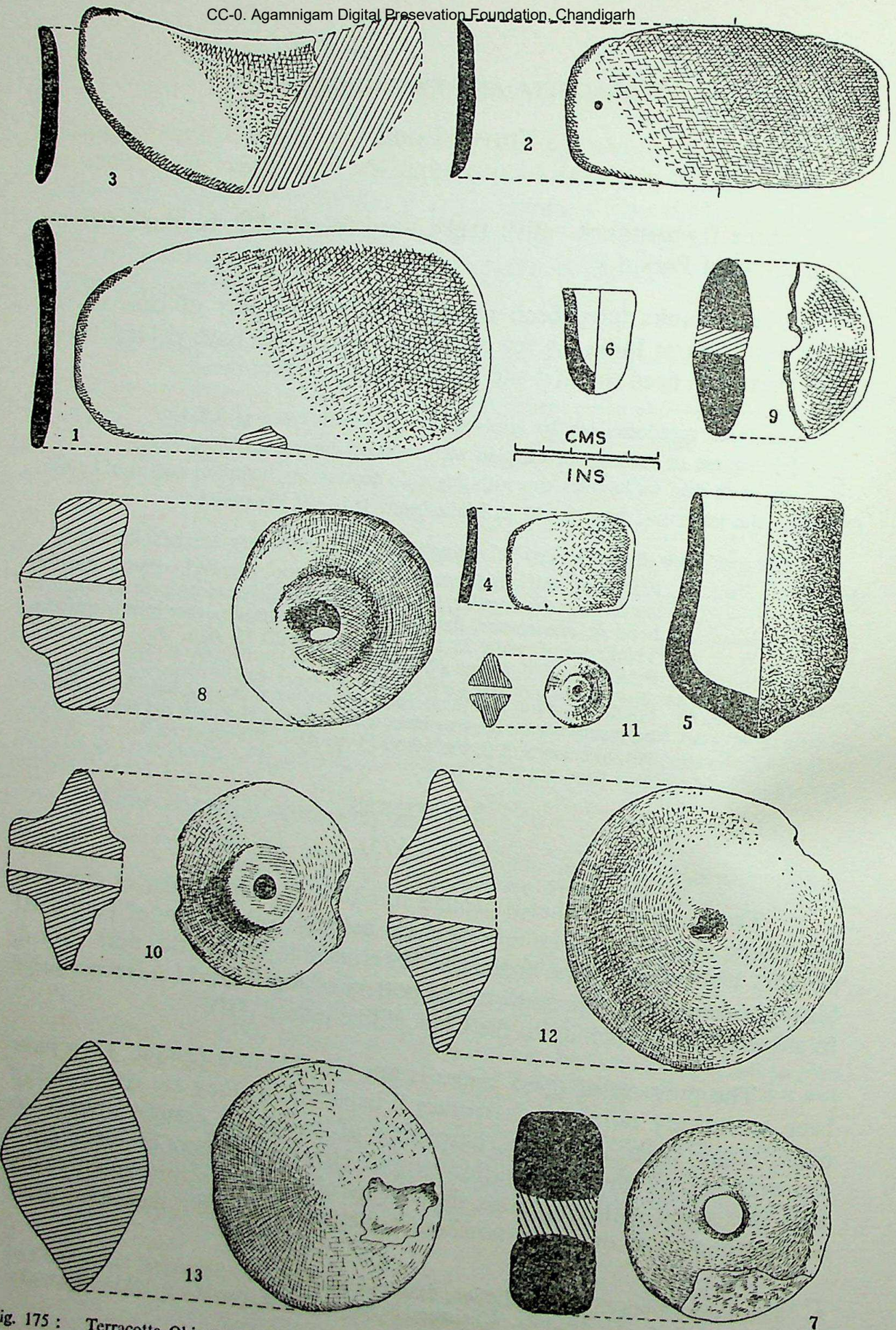

Fig. 175 : Terracotta Objects [1/2]. Sharpners (1-4), Crucibles (5-6), Wheels (7-13). (See pp. 383-384, 388).

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slight use. In some cases the outer surface of these pieces bear painting in black which form part of the pot to which the sherd originally belonged.

Similar pieces have been reported from Bahal[9] in Khandesh, in Chalcolithic levels.

These pieces, as noted above, fall into three main shapes:

(*a*) rectangular with convex ends,

(*b*) crescent shaped,

(*c*) small rectangular.

Type (a) is represented by most of the specimens while the next has only three specimens.

Their measurements are as follows (in mm.).

Types	Max-Length	Min. Length	Max. Breadth	Min. Breadth
a	152	84	72	42
b	—	78	54	—
c	43	—	31	—

As most of these pieces are fragmentary, these measurements represent extant dimensions. But their thickness ranges between 4 mm. and 7 mm.

The following are illustrated.

Fig. 175, No. 1 A complete specimen, broader at one end, concave, edges ground. No. 2249, NVS, A, 9. [Type a].

No. 2 As above but smaller in size and with an attempted perforation at one end. No. 2294, NVS, C, 9. [Type a].

No. 3 Fragment, possibly crescent-shaped, outer surface red-slipped and painted in black. No. 3878, NVS, A, 10a. Near Burial No. IV. [Type b].

No. 4 Complete specimen, rectangular in outline, one end ground to a sharp edge. No. 744, NVS, E, 12. [Type c].

CRUCIBLES
(Fig. 175)

Thirty-six fragmentary pieces of crucibles were found. Eleven belong to Period IV, twenty-four to Period V and one comes from Period VI. This dating is confirmed by several other sites in the Deccan as well as sites in Central India.[10]

The five intact pieces picked up at Nevasa have enamel on the outer surface only. They were broad based with a pointed bottom,

9. Information from Shri M. N. DESHPANDE, Department of Archaeology.

10. See, SANKALIA and DEO, *op. cit.*, pp. 104-05; SANKALIA, SUBBARAO and DEO, *op. cit.*, p. 200.

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had high straight walls, were very thick at the base and had a brittle jet black core.

That these were used for melting purposes is evidenced by the remains of green rusted bits of metal sticking to the interior of some. The pointed bottom shows that crucibles were either kept on a small tripod over fire or held by a pair of tongs.

Crucibles of different sizes seem to have been used possibly for different materials. The maximum and the minimum diameters of the mouths of these crucibles varied between 28 mm. and 57 mm., while the depth of the extant intact piece is nearly 130 mm.

Fig. 175 No. 5 Almost an intact piece, broad at the base, pointed bottom, outer surface enamelled, interior coarse black with bits of rusted metal sticking to it. Depth 125 mm., diameter of mouth 51 mm. No. 1730, NVS, I, 2. Period V.

No. 6 An intact piece without a pointed bottom, smallest in size, outer surface only enamelled. Diameter 28, height 38 mm. No. 1458, NVS, D, 3. Period V.

Pottery Discs

One hundred and thirty-seven pottery discs were found. All these are pieces of waste potsherds rounded either by cutting or grinding.

Those with perforations might have been used as spindle whorls or as toy pieces. Unlike Maheshwar,[11] these do not conform to a graded series of weights. However, a set of thirty-two such discs was found in a pot belonging to the Indo-Roman (Period V) layer. It is likely that these were deposited as play-pieces for the children.

The distribution and typology of these are as follows:

(*a*) Unperforated discs—70

Periods:	VI — 26	Max. Thickness	— 9 mm.
	V — 37	Min. Thickness	— 3 mm.
	IV — 1	Max. Diameter	— 48 mm.
	III — 2	Min. Diameter	— 12 mm.
Surface	— 4		

11. Sankalia, Subbarao and Deo, *op. cit.*, p. 195.

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(*b*) Discs with incomplete perforation—6

Periods:	VI — 3	Max. Thickness	— 7 mm.
	IV — 1	Min. thickness	— 5 „
Surface	— 2	Max. Diameter	— 51 „
		Min. Diameter	— 22 „

(*c*) Discs with one perforation—58

Periods:	VI — 11	Max. Thickness	— 12 mm.
	V — 13	Min. Thickness	— 5 „
	IV — 8	Max. Diameter	— 85 „
	III — 26	Min. Diameter	— 20 „

(*d*) Discs with two perforations—3

Period:	V — 3	Max. Thickness	— 7 mm.
		Max. Diameter	— 47 and Min. 35.

Discs with a single perforation were in use in Period III and they were cut out of only the tough Jorwe fabric. Unperforated pieces were very common in Period VI, though a few were worked upon for perforation.

The perforation of the Chalcolithic discs is remarkably even and neat showing that these were bored very carefully by a sharp point. As the thickness to be pierced through was not much, drilling was done only from one surface resulting in an uniformly circular perforation.

STOPPERS

(Fig. 176)

Of the six terracotta stoppers, one belongs to Period III, three to Period V and the rest to Period VI.

They fall into the following types.

(*a*) long, tapering cylinders: Period V-2.

(*b*) cones: Period VI-1.

(*c*) as 'a' but with concave top and a shallow depression below the top: Periods III, and V, 1 each.

(*d*) with a convex top having a perforation and a pointed projection on the under-surface: Period VI, 1.

Fig. 176, No. 1 A complete specimen, flat top, concave tapering sides. No. 6253, NVS, Y, 6. Period III. [Type c].

No. 2 A complete specimen, convex top with a perforation to pass a thread through to pull out, pointed end. No. 652, NVS, G, 1a. Period VI. [Type d].

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LIDS AND COVERS

(Fig. 176)

Four specimens of probably lids or covers were found. All these are of coarse red fabric. Two belong to Period III and two to Period V.

These can be grouped into four types.

(*a*) covers with a hollow interior, broad base and a tapering hold;

(*b*) solid pieces with convex base and a horizontal projection for hold, lime coated;

(*c*) with concave hollow base and a truncated knob for holding;

(*d*) flat circular cakes.

Types 'a' and 'b' belong to Period V, and 'c' and 'd' to Period III.

Fig. 176 No. 3 An almost complete piece, coarse red, top broken, Type 'a'. No. 859, NVS, C, 2. Period V.

No. 4 Complete specimen with hold broken, lime coated and painted with red ochre. Type 'b'. No. 1011, NVS, A, 2. Period V.

No. 5 Fragment, shallow concave base, coarse red, top broken, might be a base of a stand. Type 'c'. No. 7302, NVS, F, 11. Period III.

No. 6 Complete, hand-made cake, coarse red, might be a cover of a small pot. Type 'd'. No. 6969, NVS, F, 11. Period III.

SHALLOW, HAND-MADE, SMALL BOWLS

(Fig. 177)

All the seven are flat-based and fashioned by hand.

Save one, all the rest belong to Period VI. Their diameters range between 50 mm. and 29 mm.

The specimen coming from Period V bears decoration.

Fig. 177 No. 1 A complete, flat-based bowl, interior depressed, red surfaces. No. 494, NVS, D, 1a. Period VI.

No. 2 Complete specimen, smaller, central depression bounded by pointed decoration. No. 1224, NVS, H, 2. Period V.

DABBER

(Fig. 176)

Two fragmentary pieces of what might have been heavy terracotta dabbers were found. Both have a convex base, concave sides and coarse red fabric.

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The unillustrated specimen is short and stumpy and was possibly used both ways. Both belong to Period V.

Fig. 176 No. 7 Fragment, concave-sided, slightly convex base, upper end broken. No. 3339, NVS, H, 4.

WHEELS

(Fig. 175)

Twenty-three terracotta wheels were found. They could be grouped as follows :

(*a*) thick wheels, rectangular in section, broad at the circumference.

(*b*) as ' a ' but with a prominent hub on one side only, very crude, coarse black.

(*c*) as ' a ' but with slightly convex sides.

(*d*) biconvex wheels with truncated hubs on both the sides.

(*e*) biconvex wheels without hubs.

Their distribution and measurements are tabulated below:

Types	Periods					Diameter (mm.)		Thickness (mm.)	
	III	IV	V	VI	Totals	Max.	Min.	Max.	Min.
a			3	1	4	87	39	29	24
b			1	1	2	90	75	36	27
c	2	1			3	78	58	17	15
d		3	3	3	9	75	23	45	14
e	1	2	1	1	5	96	26	39	7
Totals	3	6	8	6	23				

It is clear from the above table that hubless wheels were in use in the Chalcolithic Period. These included either the biconvex solid ones or those which were thick at the circumference. The hubbed wheels are found at Nevasa only from the early historic period onwards. Wheels of Period VI are crude, coated with lime and painted in red ochre.

Typologically, the Chalcolithic wheels, indicative of the use of carts, are very interesting. As is well-known, the Indus wheels have a hub on

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one side only, while Chanhudaro has yielded mono-hubbed, biconvex and flat wheels. The Nevasa Chalcolithic specimens are all devoid of hub, and as such represent a less advanced technological stage inasmuch as the hubless wheels suffer from friction with the body of the vehicle.[12]

The illustrated specimens are as under:

Fig. 175 No. 7 A complete specimen, coarse red, rough, big perforation. No. 1316, NVS, B, 1a. Period VI. [Type 'a'].

No. 8 A complete specimen, coarse, hand-made, ill-baked black surfaces. [Type 'b']. No. 648, NVS, B, 1a. Period VI.

No. 9 Half fragment, biconvex, broad at circumference. [Type 'c']. No. 7144, NVS, F, 11. Period III.

No. 10 Almost complete specimen, hubbed on both sides. [Type 'd']. No. 4358, NVS, H, 4. Period V.

No. 11 A complete specimen, as above but small. [Type 'd']. No. 6561, NVS, H, 8. Period IV.

No. 12 A complete biconvex specimen, hollow and making a rattling sound when moving. [Type 'c']. No. 1975, NVS, I, 3. Period IV.

No. 13 As above, but heavy, solid and without perforation. [Type 'e']. No. 7244, NVS, G, 12. Period III.

Toys

(Figs. 176, 177, 178)

A variety of animal and bird terracotta toys were found. They include bulls, cows, elephants, horses, rams and a host of unidentified animals. Besides these, several leg and tail fragments were found.

Bulls

Twenty-six intact specimens were found. Of these, three belong to Period IV, eighteen to Period V and five to the latest period.

Most of these have applique tails. In a few cases, it is shown by incised lines. One specimen is without a tail, while one has only two legs—one in the front and the other at the rear. Bulls of the Muslim Period (VI) are invariably lime coated and painted with red ochre. A few specimens of Period V show a prominent plump hump.

Fig. 176 No. 8 Almost an intact specimen, handmade as shown by finger impressions, smallest, perforated hump to pass a thread through possibly to fasten it to the cart, if any; dark brown. No. 5383, NVS, G, 7. Period IV.

12. Sankalia, Subbarao and Deo, *op. cit.* p. 192.

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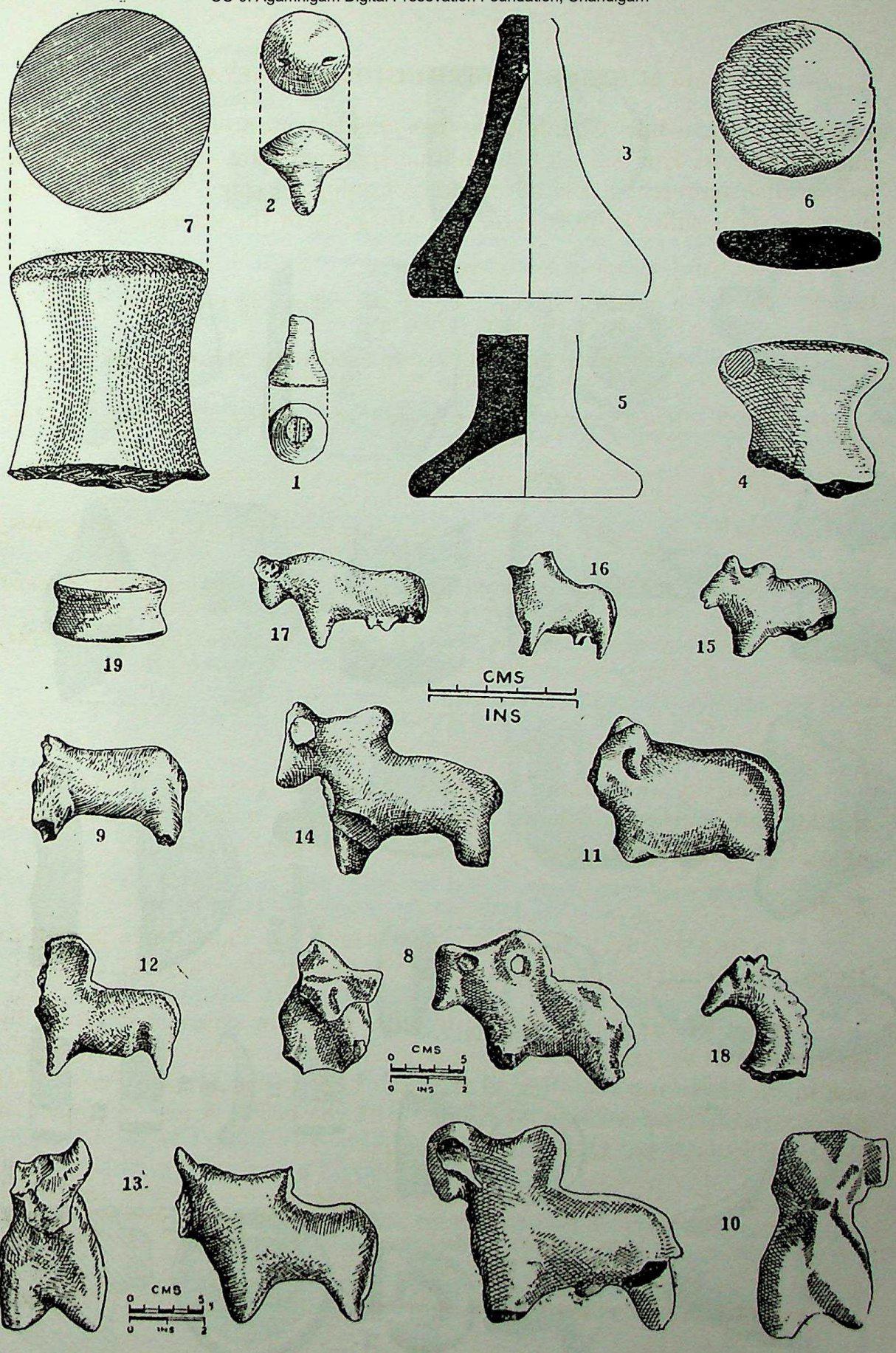

Fig. 176 : Terracotta Objects [1/2]. Stoppers (1-2), Lids and Covers (3-6), Dabber (7), Toy Bulls (8-14), Cows (15-17), Horse (18), Pulley-like object (19). (See pp. 385-388, 391, 397).

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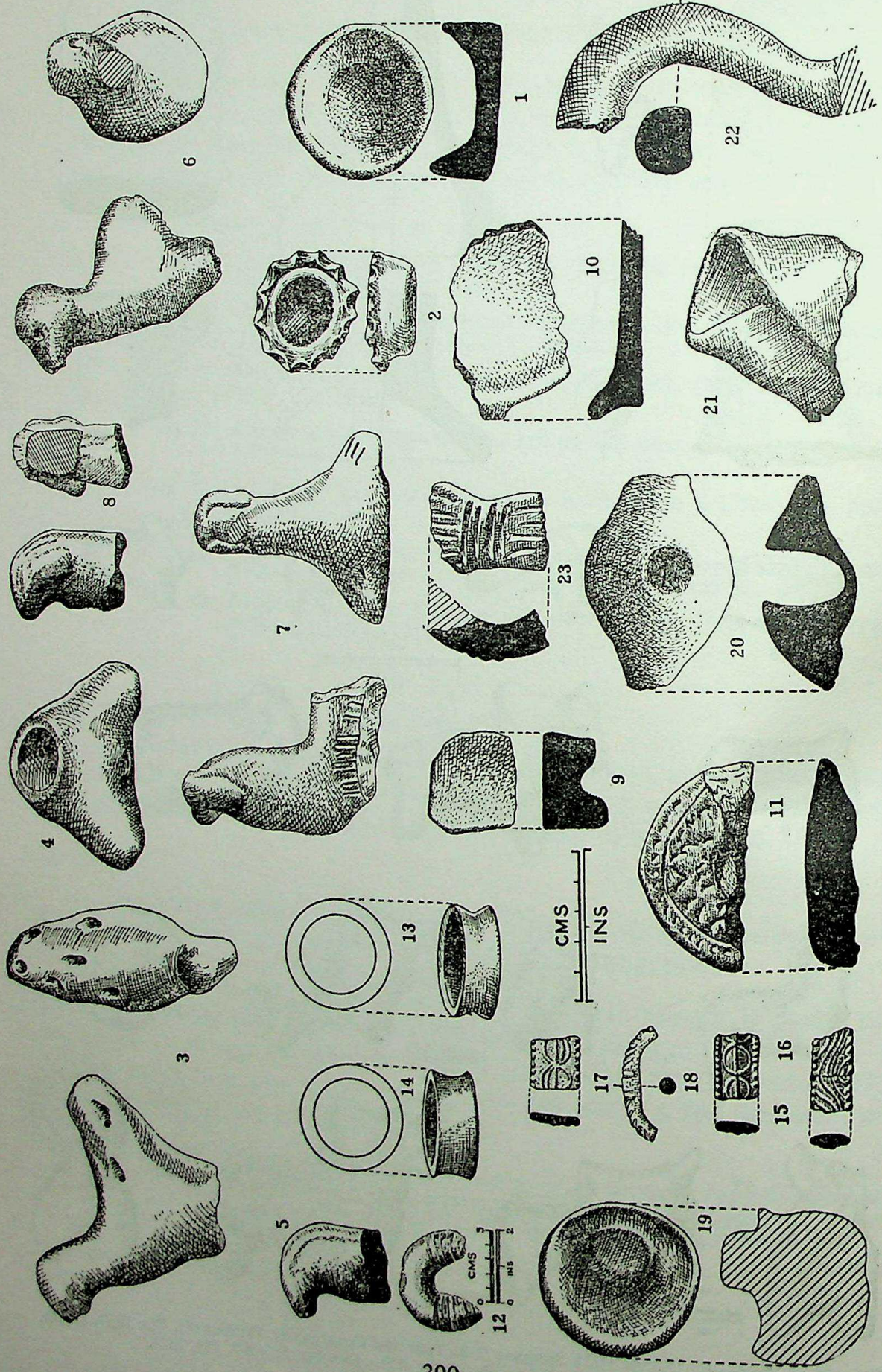

Fig 177 : Terracotta Objects [1/2]. Small Bowls (1-2), Bird Toys (3-8), Toy Stools (9-10), Decorated Disc (11), Earing (12), Ear-ornaments (13-14), Bangles (15-18), Knobbed piece (19), Unidentified object (20), Spout (21), Handles (22-23). (See pp. 386, 395-398).

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No. 9 Fragment, headless, two legs only hence cannot rest, tail-less, coarse black. No. 2593, NVS, D, 7. Period IV.

No. 10 Bull, one leg broken, horns also broken, prominent humps, insignificant dewlap, coarse black. No. 5728, NVS, F, 7. Period V.

No. 11 Fragment, legs and face broken, ears, two horns and vertibr shown, no hump, coarse red. No. 5598, NVS, F, 7. Period V.

No. 12 Fragment, one leg and mouth broken, applique tail, grand hump. No. 1089, NVS, F, 2. Period V.

No. 13 Small bull, face broken, no tail, curved horn, hard baked. No. 1993, NVS, A, 6. Period V.

No. 14 Bull with short applique tail, two legs and one horn, short ears below horns, body coloured with red ochre and yellow pigment. No. 5105, NVS, F, 6. Period V.

Cows

Four terracotta small-size cows were found. All belong to Period V.

Fig. 176 No. 15 Almost complete, two rear legs broken, small hump, applique tail broken, two ears and one horn broken, mouth and nostrils shown by incisions, small udder shown, insignificant dewlap. No. 5232, NVS, E, 6.

No. 16 Fragment, as above but with face broken, no hump, applique tail. No. 1958, NVS, H, 3.

No. 17 A cow with no hump (like the English breed), short applique tail, three legs and horns broken. No. 2561, NVS, E, 3.

Horses

Two fragmentary pieces of horses were found. Both came from the layers of Period V.

Fig. 176 No. 18 Fragment, neck, head and mouth extant, short ears, mane shown by pinching clay, coarse red. No. 1112, NVS, D, 2.

Elephants

Five specimens were found. Save one, all the rest are from double mould. Four come from Period V and one from Period IV.

A remarkable piece is the most proportionate rattling elephant toy. Except one, most of the pieces are lime coated and belong to the topmost layer of Period V. It is likely that they really belong to Period VI, in which lime coating was a favourite decoration.

Fig. 178 No. 1 Fragment, trunk broken, one side flat (single mould), plump belly, coarse red, traces of red slip over a white paint. No. 6109, NVS, F, 8. Period IV.

No. 2 Almost complete but trunk broken, double-moulded, rattle, lime and yellow ochre coating all over. No. 991A, NVS, B, 2. Period V.

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No. 3 Possibly an elephant, crudely executed, lime-coated. No. 1683, NVS, A, 5. Period V.

No. 4 Fragment, rear and legs broken, lime coated, possibly an elephant rider indicated by legs, body broken. No. 1827, NVS, H, 2. Period V.

Rams

Nine specimens were found. Most of these are fragmentary. Two belong to Period VI and the rest come from the topmost layer of Period V. Several are lime-coated, and show a very crude workmanship.

Fig. 178 No. 5 Almost complete specimen, tip of mouth and two legs broken, horns indicated by fan-shaped projection. No. 1506, NVS, B, 2. Period V.

No. 6 Almost complete, probably a ram with curved horns, lime-coated and red ochre painted. No. 358, NVS, C, 1. Period VI.

No. 7 Fragment, as above, incised slanting lines at the rear, incisions also at the head, lime-coated. No. 976, NVS, C, 2. Period V.

Fragments

Body fragments of several animal toys were found. These cannot be identified. Nine belong to Period V and four to Period VI.

Of the leg fragments, only one comes from Period III, two from Period IV, five from Period V and nine belong to Period VI.

Besides the leg fragment, no other toys were found in the Chalcolithic levels. Period V has the maximum number. The practice of lime-coating and painting with red or yellow ochre seems to have started in Period V and become a routine feature in Period VI.

Unidentifiable Toys

Thirteen specimens are such as cannot be identified. They are very crude and instead of being any particular animal, represent simply the concrete or material incarnation of the idea of a toy.

Three belong to Period VI and eleven to period V.

Fig. 178 No. 8 A small specimen, small tail, one leg broken, fan-shaped hump. No. 3396, NVS, D, 5. Period V.

No. 9 A long-necked animal, body broken, short ears, long tapering mouth, applique and pinched ornament on the neck, horse (?). No. 110, NVS, G, 1. Period VI.

No. 10 Fragment, bird or animal, long applique ears, lime-coated, red ochre painted. No. 1052, NVS, C, 2. Period V.

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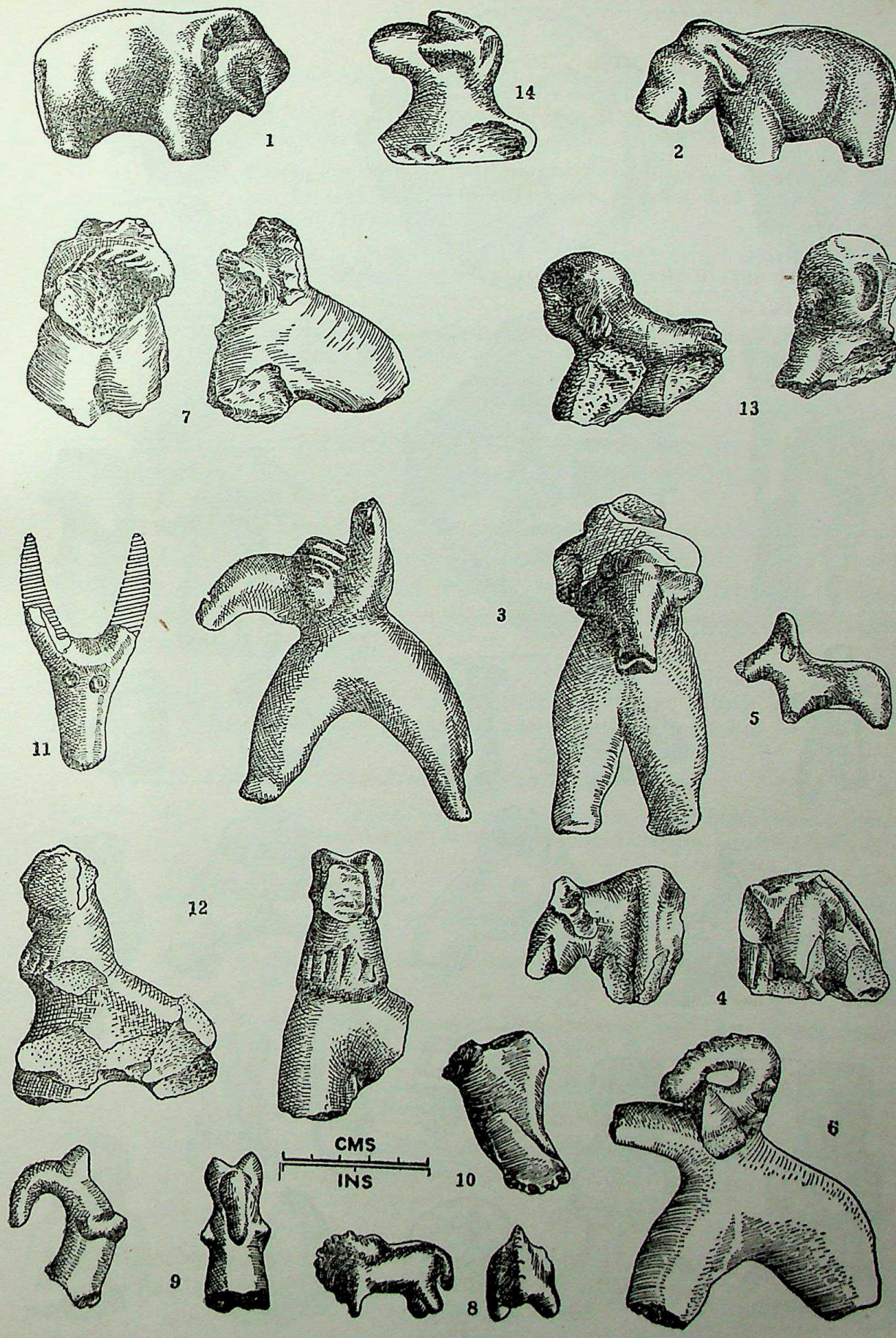

Fig. 178 : Terracotta Toys [1/2]. Elephants (1-4), Rams (5-7), Unidentified Toys (8-14). (See pp. 391-392, 395).

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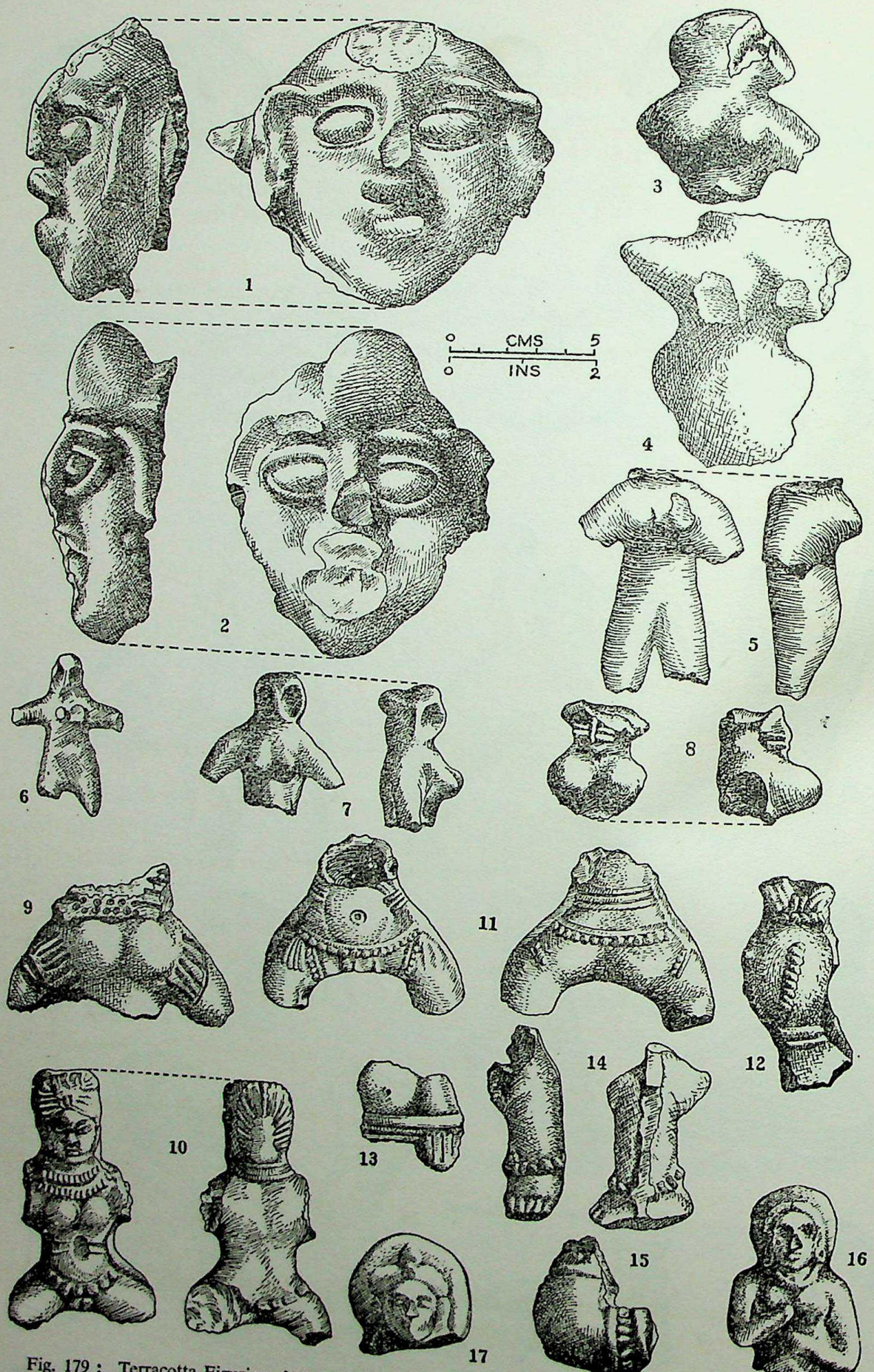

Fig. 179 : Terracotta Figurines [1/2]. Masks (1-2), Female Figurines (3-17). (See pp. 399, 401-402).

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No. 11 Fragment, animal head, two round applique eyes. No. 320. NVS, I, 1. Period VI.

No. 12 Fragment, like No. 9 above but short applique ears, incised decoration on the neck, lime-coated, red ochre painted, four legged. No. 206, NVS, E, 2. Period V.

No. 13 Fragment, small, four-legged, lime coated, long drooping ears, short mouth, eyes shown by depressions, probably a dog. No. 1128, NVS, A, 2. Period V.

No. 14 Almost complete specimen, flat based, no body, mouth shown by incision, lime-coated. No. 1403, NVS, A, 3. Period V.

Birds

Six bird-like toys were found. Except one, all the rest belong to the topmost layer of Period V. One comes from the latest period.

It is not possible to identify the birds, but most of these might be pigeons. The most remarkable is the hollow, circular-based beaked bird which has holes in its rear part. Possibly feathers (like peacock feathers) were inserted into these and the toy could be taken to represent a peacock. The idea is certainly ingenius.

Another feature of these toys is that some have a hole in the body. By passing a thread through it, the toy could be kept hanging.

None is complete and most of these are flat based.

Fig. 177 No. 3 Almost a complete specimen, beak broken, round head, circular hollow base, perforations at the rear for inserting feathers. No. 912, NVS, A, 2. Period V.

No. 4 Fragment, as above but having a single breadthwise perforation to keep the toy hanging. No. 601, NVS, A, 1a. Period VI.

No. 5 Fragment of the head and beak of a bird, coarse red, painted with red ochre. No. 2422, NVS, G, 3. Period V.

No. 6 Fragment of a bird, short beak, applique eyes, lime coated, hollow interior, circular base. No. 1085, NVS, E, 2. Period V.

No. 7 Fragment, high necked, short mouth, flat based, lime coated, hen-like in appearance. No. 1826, NVS, H, 2. Period V.

No. 8 Fragment, broad applique ears, incision on the head, coarse red, may not be a bird. No. 779, NVS, H, 2. Period V.

Toy Stools (?)

Two such pieces were found. One comes from Period V and another from Period VI. Both are handmade.

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Fig. 177 No. 9 A four-legged piece with a flat top, coarse red. No. 3213, NVS, H, 4. Period V.

No. 10 A bigger piece, possibly circular in outline, one leg intact, smooth surfaces. No. 249, NVS, A, I. Period VI.

Miscellaneous Objects

Besides the objects described above various other objects of terra-cotta were found. Several of these are of unidentifiable nature. Wherever it is possible, they have been identified.

Decorated Disc

Fig. 177 No. 11 Half of a circular terracotta piece with one of its surfaces having petalled-lotus design bounded marginally by shallow dots. No. 3925, NVS, D, 5. Period V.

Ear-ring

Fig. 177 No. 12 A small crescent-shaped piece with the tips broken, incised decoration on both surfaces near the tips, double-mould. No. 3149, NVS, H, 3. Period V.

Ear-Ornaments

Fig. 177 No. 13 A small ring-like piece broad at the circumference, green and red painted at one face, possibly used as an ornament in the ear-lobe, diameter 36 mm. breadth 15 mm. No. 1849, NVS, F, 2. Period V.

No. 14 Complete as above, but painted white only. Size as above. No. 437, NVS, A, 2. Period V.

Bangles

Five fragments were found. They have an impressed decoration in relief. These can be grouped in two categories.

(*a*) those with a broad surface between 13 mm. and 17 mm.

(*b*) those with round section and incised rope design, thickness 7 mm.

Fig. 177 No. 15 Fragment, inner surface smooth, outer bearing dots and joined bisected circles in relief. No. 3182, NVS, Y, 3. Period IV (Type a).

No. 16 Fragment, as above but less broad, design of dots and wavy lines in relief. No. 4998, NVS, Y, 3. Period IV (Type a).

No. 17 Fragment, broadest, dot and cut circles in relief. No. 381, NVS, X, 1. Period VI (Type a).

No. 18 Fragment, circular in section, outer surface having incised rope design. No. 4351, NVS, H, 4. (Type b).

Pulley-shaped Ornaments

Five pulley shaped solid pieces were found. All these belong to Period V.

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TERRACOTTA AND KAOLIN OBJECTS

Similar objects in terracotta, glass, bone and shell have been reported from a number of sites in India, mostly from early historic levels.

Scholars were doubtful about the use of these as ornaments in the earlobes. But Somanath and Ujjain have yielded glass specimens with gold leaf and inlay work which have finally settled their use as decorative ornamental pieces. Further, these are depicted in ancient paintings and sculpture and are even now worn by some people in South India.

Besides terracotta, similar pieces in shell and bone have been found at Nevasa.

The terracotta specimens range in diameter between 40 mm. and 21 mm., and in thickness between 16 mm. and 8 mm. Two of these are partially perforated in the centre on one face.

Fig. 176 No. 19 A complete specimen, smooth brown surface, concave channel at the circumference. No. 2324, NVS, H, 2. Period V.

A Knobbed piece

Fig. 177 No. 19 A complete piece solid and heavy, hand-made, uneven base, top surface having a short knob, purpose not known. No. 1699, NVS, C, 4. Period V.

An unidentifiable object

Fig. 177 No. 20 A circular piece with a short lug on one side, the opposite end showing probably a curved handle (?), a shallow circular hole in the centre. No. 437, NVS, B, 2. Period V.

Spout (?)

This is a fragmentary piece of coarse red fabric. It is lime-coated and made by folding a clay band. It might have been a spout.

Fig. 177 No. 21 Fragment, spout (?) made by folding clay. No. 538, NVS, C, 2. Period V.

Handles

No handled vessel of Period VI was found, but pieces of coarse red handles with lime-coating were found. These could be grouped into two types :

(*a*) those with circular section and curved in outline (4)

(*b*) short handles with oval section, incised decoration and no lime-coating (1).

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Fig. 177 No. 22 Fragment of a handle with circular section, curved outline, coarse red, lime-coated. No. 602, NVS, A, 1a. Period VI. (Type a).

No. 23 Fragment, short curved handle, oval in section. Outer surface having groups of vertical and horizontal incisions, coarse black. No. 91, NVS, G, 1a. Period VI. (Type b).

Tiles

Scores of fragmentary and complete tiles were found in the layers of the Periods IV and V. However, in the latter they were more abundant.

A group of six tiles over-fired and consequently stuck together was found in layer 4 of Period V indicating that the tiles were locally made.

These tiles are rectangular on plan, with grooves on the upper surface, a pair of perforations along the breadthwise side and a deep single groove on the lengthwise side of the undersurface. Similar tiles have been reported from a number of sites in the Satavahana/Indo-Roman levels.

The maximum extant length of the tiles varied between 11 in. and 5 in. whereas the breadth ranged between 7.5 in. and 5.5 in. The grooves on the upper surface were between two and five in number. The tiles were made out of very gritty clay mixed with abundant straw pieces.

The tiles were fixed to the rafters below with the help of iron nails. The extensive floor levels and brick structures of the Indo-Roman Period (V) account for the abundance of such tiles and nails in the levels of this period.

None is illustrated.

Masks

Two specimens of masks of terracotta were found in the late levels of Period V. These provide additional evidence of foreign influence.

Lion-masks made of terracotta were used to decorate the sides of vessels at Taxila, and are believed to have been introduced by the Parthians. Marshall regards these as imitations of Hellenistic prototypes. These further seem to have been made locally as moulds for these were also found.[13]

The Nevasa specimens, though contemporary with the Taxilan, are human faces. These seem to have been fashioned partly in a single mould and partly by hand—the latter process evidently adopted to give finishing touches and to sharpening the relief of the face.

13. Marshall, *Taxila*, II, pp. 436-37; III, pl. 131, *l*, *m*, *k*, *n*.

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Both the human faces are alike. They have large protruding eyes, prominent ears, thick lips, short thin cylinder-nose and an uṣṇiṣa-like knob just above and in between the eye-brows. They look grotesque. The outline of the eyes is deepened by incisions. The entire surface of these masks is coated with a yellowish limy slip and there are traces of painting in red ochre on the upper lip and forehead-knob. In the case of one, the backside is flat, whereas the other shows some portion of the pot to which it was stuck. On the whole they are thick-set, heavy, and the pot to which they were attached was also thick-sided.

Fig. 179 No. 1 A complete mask depicting human face, backside having some portion of the pot, facial features bold, eyes big and protruding, short nose, thick lips, ears flanking, knob on forehead broken, might be ornamental knob, lime-coated all over, traces of red painting on lips, ears and forehead knob. No. 4042, NVS, F, 2. (V). (Length 110 mm., Breadth 92 mm.)

No. 2 As above but smaller in size, worn out but with knob intact. No. 4047, NVS, F, 2. (V).

Terracotta Figurines

(Figs. 179-183)

Thirty-three terracotta figurines and fragments were found. Of these, twenty-eight came from the layers of the Indo-Roman period (Period V). None came from Period IV, while the rest belonged to Period VI.

The terracotta figurines show a variety in technique and typology which may be summarised as below.

A *Female Figurines*

Type I—Crude or ageless figurines
- (*a*) lumpy: V, 4.
- (*b*) pinched: V, 3.
- (*c*) as '*a*', but painted in red ochre: V, 1.

Type II—"Elaborate" mother-goddesses
V, 4; surface 1.

Type III—Standing moulded figurines
- (*a*) stiff standing figurines (single mould): V, 3.
- (*b*) figures with a halo behind (single mould): V, 4.

B *Male Figures*

Type IV—Male figures
- (*a*) as Type III above (single mould) V, 2.
- (*b*) crude figures—V, 1; VI, 2.
- (*c*) double-moulded—V, 1; VI, 1.
- (*d*) as '*b*' above, but painted in red ochre—V, 2.

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C *Boyheads*

Type V. Boyheads. V, 3.

D *Fragmentary*

Type VI. Fragmentary legs. Some of these might be parts of Type II above. V, 2; VI, 1.

The female figures of Type I stand out distinctively from the rest due to their crudeness of workmanship. These are as a whole such as have a semblance of a human figure. In the case of I*a* and I*c*, even the facial features and other limbs are not emphasised. Only in the case of I*b*, the nose is shown by pinching the clay. The mouth is sometimes depicted by a slit by a short horizontal incision. Whatever limbs, like hands and legs, are shown are extremely stiff and the figures are static. Though in the case of I*c*, painting is done, it is not to depict the limbs, but appears as an attempt of amateurish random decoration. As seen above, most of these figures come from levels assignable to the early centuries of the Christian era. Yet this group is such as extends over a large period, its earliest occurrence going back to the Chalcolithic levels (Period III). On account of their wide provenance—regionally and chronologically—they can rightly be put into the category aptly described by GORDON as " ageless ".[14]

The next important group is of " elaborate " mother-goddesses. The cult of the mother goddess is fairly old. But the squatting figurines with an elaborate head-dress is typical and has been reported so far from a number of sites such as Karad, Kolhapur, Ter and Nasik. In view of the similarity of make up, it may not be incorrect to hold that these images represent the indigenous village deities so common in the Deccan. This gets a literary corroboration from the *Gāthāsaptaśatī* of king Hāla as well.[15]

The others of this group—II*a*, III*b*—represent more static figures as they are fashioned out of a single mould. The reliefs of these figures are low and the facial features not very sharp. However, the halo behind and the trefoil pattern of hair assign them to the Gupta period.[16] Besides these one of the figures (No. 2110) showing the lady with one of her hands on her breasts may represent the *dhātrī* so common to this period.[17]

The male figures are quite commonplace and do not show any fine workmanship. Some of these bear a lime wash. The only noteworthy

14. *JISOR*, XI, (1943), p. 156.
15. JOGLEKAR, S.A., *Gathasaptasati*, pp. 192 ff.
16. DEO, S.B., "Terracotta Figurines and Toys from Maheshwar Excavation," *JBRAS*, Bombay, Sārdha Satabdi Vol., pp. 38-44.
17. AGRAWAL, V. S., "Terracotta Figurines from Ahichchhatra" *A.I.*, No. 4.

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specimen is No. 4330 which depicts a male figure with hands hanging down loosely in the *kāyotsarga* posture. However the long loose hair hanging on both the shoulders go against its assigning to the Jaina cult.

Boyheads

Delineation of innocent expression and the delicate warmth of features mark the boyheads. Especially No. 4633 (V*c*) depicting the fragmentary head of a small boy with plump cheeks is wonderful for its expression showing the gentle smile of childlike innocence. It has its exact counterpart from Taxila which is assignable to the same period as at Nevasa.[18] Another remarkable boyhead is No. 2328. It is also noteworthy for its expression. But what really differentiates it from the rest is the foreign look and the hair style. The sharp nose, the plump cheeks and the almost feminine grace of facial features make it akin to the standards of the Gandhara art. The hair shown parted in the middle and arranged sideways recall a terracotta head from Taxila, of the same period. The Taxilan specimen is, of course, finer.[19]

The illustrated specimens are as under.

Fig. 179 No. 3 Fragment, upper half of a female figure, featureless head, depressed hands, breasts prominent, black clay mixed with lime, ill-baked, backside concave, hand-made. Height 61 mm. No. 2597, NVS, G, 3. (V). [Type I*a*]. [*Fig. 181, No. 1*].

No. 4 Fragment as above but of red colour, left hand hanging, short and pointed, face convex and featureless, back-side uneven and lumpy, handmade. Height 81 mm. No. 1380, NVS, A, 3. (V). [Type I*a*].

No. 5 Fragment of a standing female figure, hands sloping down from shoulders, head lost, legs a little apart, less stiff than the two above, back uneven, handmade. Height 73 mm. No. 2854, NVS, G, 3. (V) [Type I*a*].

No. 6 Almost a complete figurine with pinched-up nose, hands straight and stiff, legs apart but tapering, one breast extant, behind the head a double lump showing hair arranged in two chignon (?). Surfaces uneven, handmade. Height 56 mm. No. 3150, NVS, H, 3. (V). [Type I*b*]. [*Fig. 181, No. 2*].

No. 7 Fragment, similar to above but bigger, hands hanging downwards, breasts prominent, nose pinched-up, at back of head one chignon extant, surfaces rough, handmade. Height 46 mm. No. 1191, NVS, B, 2. (V). [Type I*b*]. [*Fig. 181, No. 3*].

No. 8 Fragment, hands, lower body below breasts broken, nose pinched-up as also the eyebrow, mouth indicated by an incised applique lump below nose, back convex, hand-made, ill-baked, possibly mid-way between types I*a* and I*b*. Height 37 mm. No. 1505, NVS, F, 2. (V). [Type I*b*].

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18. MARSHALL, *Taxila*, Vol. II, p. 472; III, pl. 138, No. 184 (m).
19. MARSHALL, *op. cit.*, III, pl. 138, b. No. 165.

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No. 9 Fragment, head and lower part lost, hands drooping from the shoulders, the figure seems to wear bodice of ornamental cloth indicated by incisions, around the neck an ornament shown by an applique band with deep circular holes, left ear pressed, flat and with incised decoration, back portion unevenly flat, body coated by lime wash and patches of red ochre, handmade. Height 51 mm. No. 2688, NVS, G, 3. (V) [Type I*c*]. [*Fig. 181, No. 4*].

No. 10 Almost complete figurine of a mother-goddess, prepared in double mould, arms and legs below knees broken, squatting posture, hair shown by incisions and arranged in two chignons over the head, back hair also showing combing towards the top hair-knots, thick lips, tip of nose worn out, plump cheeks, around the neck two broad necklaces, proportionate belly with a shallow depressed navel, a girdle over the hips and below navel, genitals shown prominently, legs convex as if in squatting, the back-side shows the necklace and the girdle, well-made and proportionate, red baked clay. [Type II]. Height 87 mm. No. 2688a, NVS, Surface. [*Fig. 181, No. 5*]

No. 11 Fragment, similar to above but legs and portion above belly lost, prepared in double mould, hollow, girdle of circles attached to a string worn below the navel, the girdle tied in a knot the strings of which hang on the sides, another threefold tie above the girdle which goes round the back but seems to go up the belly on the front. [Type II]. No. 3214, NVS, H, 4. (V). [*Fig. 181, No. 6*]

No. 12 Fragment, back-side of a figurine made in a double mould, hollow, the extant portion shows a vertical braid of hair capped by two-fold chignon encircled by a *tope*-like arrangement of hair, traces of a double simple necklace, the piece might be the back portion of a mother-goddess figurine. [Type II]. Height 68 mm. No. 974, NVS, C, 2. (V). [*Fig. 182, No. 1*].

No. 13 Fragment of probably a squatting mother-goddess figurine, prepared in double-mould, a plump belly with a neat central navel, left arm resting on left knee, triple girdle below the navel, ill-baked. [Type II]. No. 2834, NVS, H, 3. (V). [*Fig. 182, No. 2*].

No. 14 Fragmentary left leg of probably a squatting mother-goddess figurine, hollow and prepared in double mould, features of leg shown in low relief, leg wearing an ornament. [Type II]. No. 1341, NVS, D, 1a, (VI).

No. 15 Fragment of the bent arm of a figurine prepared in a mould as the interior shows pressed finger depressions, the arm and the wrist have an ornament, prepared out of fine levigated clay, red-slipped. [Type II]. No. 501, NVS, D, 2. (V). [*Fig. 182, No. 3*].

No. 16 The upper half of a female figure prepared out of a single mould, back flat, small halo behind the head, each ear having a big circular earring, a necklace touching the breasts, right arm placed on right breast, left arm bent and placed on the belly, entire surface having a lime wash. [Type IIIb]. Height 63 mm. No. 2110, NVS, B, 5. (V). [*Fig. 182, No. 4*].

No. 17 Fragment, only head with a bigger circular halo behind, hair arranged in trefoil fashion, rest as in No. 2110 above. [Type IIIb]. No. 1894, NVS, B, 4. (V). [*Fig. 182, No. 5*].

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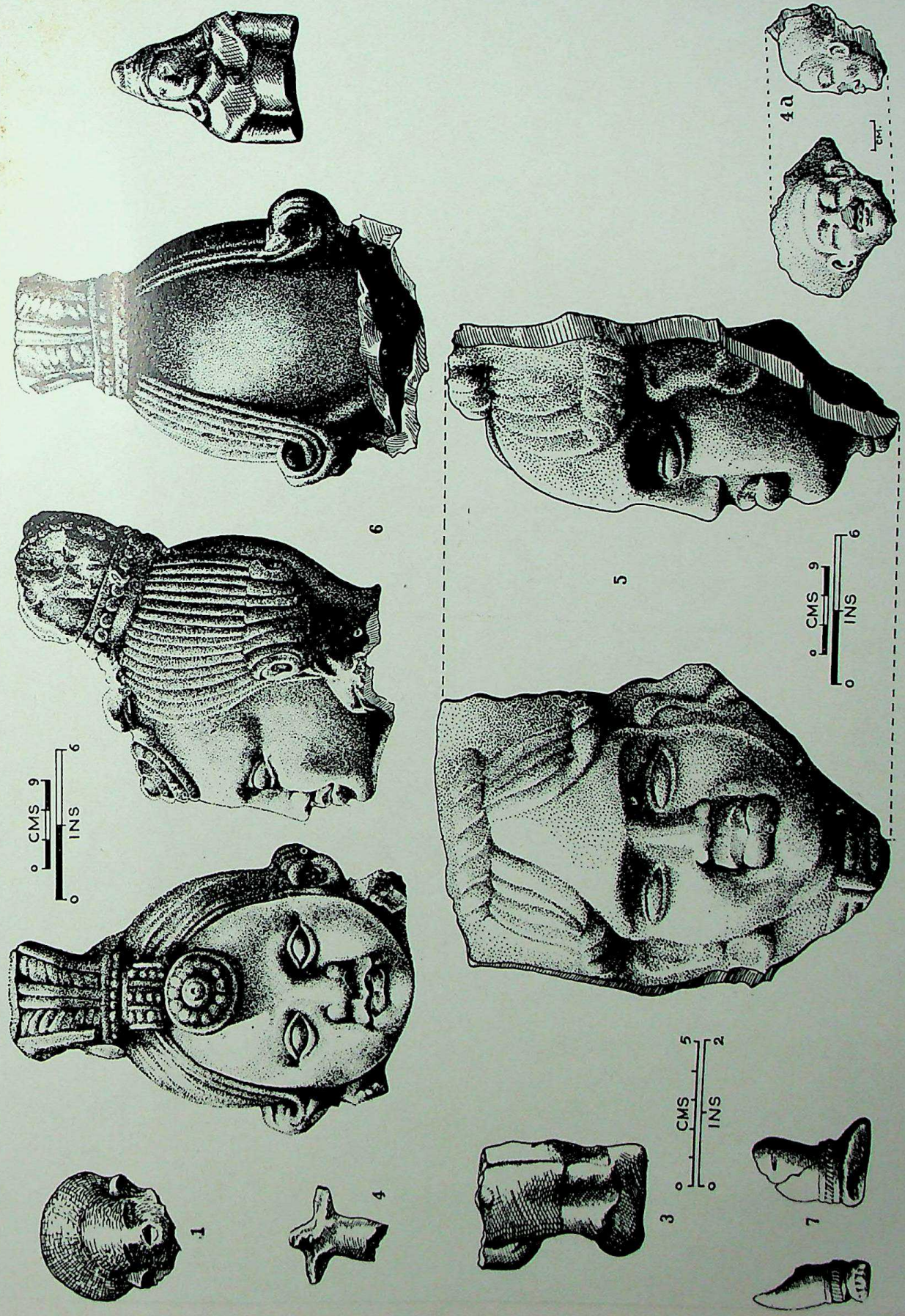

Fig. 180 : Terracotta and Kaolin Figurines [1/2]. Terracotta Female Figurine (3), Male Figurines (2-4), Boyheads (4a-5) ; Kaolin Boyhead (6), Leg Fragment (7). (See pp. 407-408).

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Fig. 181 : *Terracotta Figurines* [1/1]. *Female Figurines* (*1-6*) *Yaksha amulet* (*7*). (*See pp 401-402, 374*).

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Fig. 182 : Terracotta Figurines [1/1]. *Female (1-5) ; Male (6-7).* (*See pp. 402, 407*).

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Fig. 183 : *Terracotta and Kaolin Figurines* [1/1]. *T.C. (1-3), Kaolin (4-5).* (*See pp. 407-408*).

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Fig. 180 No. 1 Fragmentary, head of a figurine, very crude, eyes shown by applique incised lumps, mouth by a short horizontal incision, big applique ears of depressed lumps, fan-shaped halo behind head, prepared out of a single mould, traces of a red wash all over. [Type IIIb]. No. 1959, NVS, H, 3. (V).

Male Figures

Fig. 180 No. 2 The upper half of a male figure prepared out of a single mould, wearing a three-tiered head-cover, hair flowing on both shoulders, features worn out, around the neck a necklace with a central pendant, arms hanging down straight as in a *kāyotsarga* posture, traces of lime wash all over. [Type IVa]. Height 61 mm. No. 4330, NVS, H, 2. (V). [*Fig. 182, No. 6*].

No. 3 The lower half of a male figure, prepared in a single mould, left arm much longer than the right, appears to have worn a single piece of cloth around the loins the length of which goes lower than the knees, traces of a lime wash and painting in red ochre. [Type IVa]. Height 56 mm. No. 2835, NVS, H, 3. (V). [*Fig. 182, No. 7*].

No. 4 Fragment of a male figure, lower part broken, handmade, featureless except pinched nose and horizontally incised mouth, horizontal stiff short arms, shows traces of perforation in the tip of the right arm and in the belly possibly for suspension. [Type IV b]. Height 33 mm. No. 229 NVS, E, 1a. (VI). [*Fig. 183, No. 1*].

Boyheads

Fig. 180 No. 4*a* Fragmentary head of a boy with plump cheeks, exquisite smiling expression, bald head or wearing a tight-fitting head-cap, halo behind, single-mould. [Type Vc]. No. 4633, NVS, I, 3. (IV). [*Fig. 183, No. 2*].

No. 5 Head of a boy or might be a girl, hair parted in the middle and curled at the end, on top a rope-like arrangement of hair, features shown well, ears having double-rings, hair style distinctly showing foreign affinities, necklace of vertical and horizontal strings, prepared out of a single mould. [Type Vc]. No. 2328, NVS, H, 1a. (VI). [*Fig. 183, No. 3*].

Objects of Kaolin

The objects of kaolin comprised fragments of small vessels and a few boyheads.

Pot Fragments

Fig. 173 No. 5 Fragment of a vessel with out-turned rounded rim, constricted neck, possibly globular body, depressed design on outer surface, core of creamy kaolin. No. 2067, NVS, E, 3. (V).

No. 6 Fragment, possibly a high cylindrial neck, core as above. No. 2850, NVS, G, 3. (V).

No. 7 Fragmentary sherd with the outer surface having decoration in relief. No. 2310, NVS, E, 2. (V).

Boyheads and Figurine Fragments

Some belly portions, few leg portions and a boyhead were picked up from the layers of Period V.

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Of these the boyhead is remarkable for its artistic delineation of head-dress and plump facial features. Identical figure-heads in kaolin as well as in terracotta have been reported from Ter, Paithan, Kondapur and Nagarjunikonda. At all these places they are dated to the early centuries of the Christian era.

The identity of make over such a wide area of the Deccan, and its copies in terracotta even at Nevasa tempt one to assign it a cult significance. However, it cannot as yet be presumed with certainty. Their occurrence in a fixed stretch of a couple of centuries of the Christian era certainly makes these boyheads relics of significance.

The following are illustrated.

Fig. 180 No. 6 Kaolin boyhead, hair parted and curled in a bunch on both sides above the ears[1] on top of head an ornament possibly tied so as to cover the bunch of hair, a part of hair rolled in between the top ornament and the fore-head pendant, broad nose, smiling countenance, back-side shows hairless [*Fig. 183, No. 4*]. No. 9401, NVS, A, 1. (VI). head, does the child wear a wig?, prepared out of double mould.

No. 7 Fragment of the left leg of probably a squatting figure, prepared out of double mould, leg wearing an ornament, fingers shown by incisions, flat base. No. 1297, NVS, D, 3. (V). [also *Fig. 183, No. 5*].

XII

METAL OBJECTS

A variety of objects made in different metals was found at Nevasa. The metals used were copper, gold, iron, lead and silver.

The objects made of these show a considerable range such as beads, kohl-sticks, bangles, rings, hooks, nails, chisel, small pots, knives, daggers, spearheads, and arrowheads.

The use of copper seems to have started in the levels of Period III, i.e. Chalcolithic. Iron was introduced in the succeeding Period IV, in about the 2nd century B.C., becoming common in the next Period V which yielded most of the metal objects under study.

1. The *Raghuvaṁśa* (XI, 1) refers to such an arrangement of side locks as '*kakapaksadhara.*' However, the back of the head shows that there are no hair. In this case, the possibility of a wig also survives.

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METAL OBJECTS

(A) COPPER OBJECTS

A fairly large number of copper objects was found. They could be grouped into the following categories.

(i) objects of toilet,

(ii) beads, bangles and ornaments,

(iii) tools and weapons,

(iv) pots and utensils,

(v) musical objects.

(i) Objects of Toilet

These include kohl-sticks and a hair-pin.

Kohl-sticks

Nine specimens of kohl-sticks were found. Of these, three belong to Period IV, four to Period V and the rest to Period VI.

Most of these are heavily encrusted. Yet they can be grouped into two varieties. The first variety (A) consists of thin rods with both the ends bulbous, and the second category (B) comprises rods with uniform thickness but with one end slightly tapering to a point. Both these varieties were in use simultaneously in all the three periods.

The specimens under study do not show any divergence from the types known from earlier periods at severial other sites. It is also well-known that kohl-sticks have been in use since early times in Egypt as also at Mohenjodaro. However, our specimens go well with those found at Taxila.[2] Along with copper, kohl-sticks of bone have also been found at Nevasa.

The dimensions of the two types of kohl-sticks are as follows:

(A) Maximum length 136 mm.; minimum 54 mm.
Maximum thickness 6 mm.; minimum 4 mm.

(B) Maximum length 126 mm.; maximum thickness 6 mm.

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2. Marshall, *op. cit.*, II, pp. 585-6.

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Fig. 184 No. 1 An intact piece with both the ends bulbous, body thin, slightly encrusted. (Type A), No. 6001, NVS, E, 9. (IV). [also *Fig. 185, No. 1*].

No. 2 A complete rod of uniform thickness, one end pointed, heavily encrusted. (Type B). No. 1717, NVS, B, 4. (V). [also *Fig. 185, No. 3*].

Pin

Only one specimen of what might possibly be a pin was found.[3] It belongs to Period V.

Fig. 184 No. 3 Fragment of probably a pin with one end coiled, the rest of the rod circular in section. Thickness 4 mm. No. 1215, NVS, F, 2. (V).

(ii) Beads, Bangles and Rings

Though few in number, the objects belonging to this category represent a fair variety of shapes and designs.

Bangles

Eleven bangle pieces were recovered from the excavations. Most of these were fragmentary and heavily encrusted.

The earliest are from Period III at Nevasa which yielded two specimens; all the rest came from Period V.

Specimen No. 6722 coming from the Chalcolithic Period (III) was sent for analysis. The analysis showed that it contained 98.31% copper. Other constituents could not be determined in their exact proportions. But the presence of tin, iron, nickel, manganese, zinc etc. was detected. It could not be said whether these were added or were natural. Metallographic analysis showed that the bangle was made of a single phase alloy and worked at a high temperature. The un-analysed specimen also showed that the bangle was made by hammering a rod of copper.

In the subsequent Indo-Roman period bangles were found to have been made of hollow tubes of copper.

The specimens under study fall into four groups.

(*a*) those with a round section (4)

(i) hollow—V, 2.

(ii) solid—IV, 1; VI, 1.

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3. Hair pins with coiled head and made of copper or bronze go back to Indus sites. Mackay, *Chanhudaro Exc.*, p. 194, pl. LXIX, Nos. 5, 7-10.

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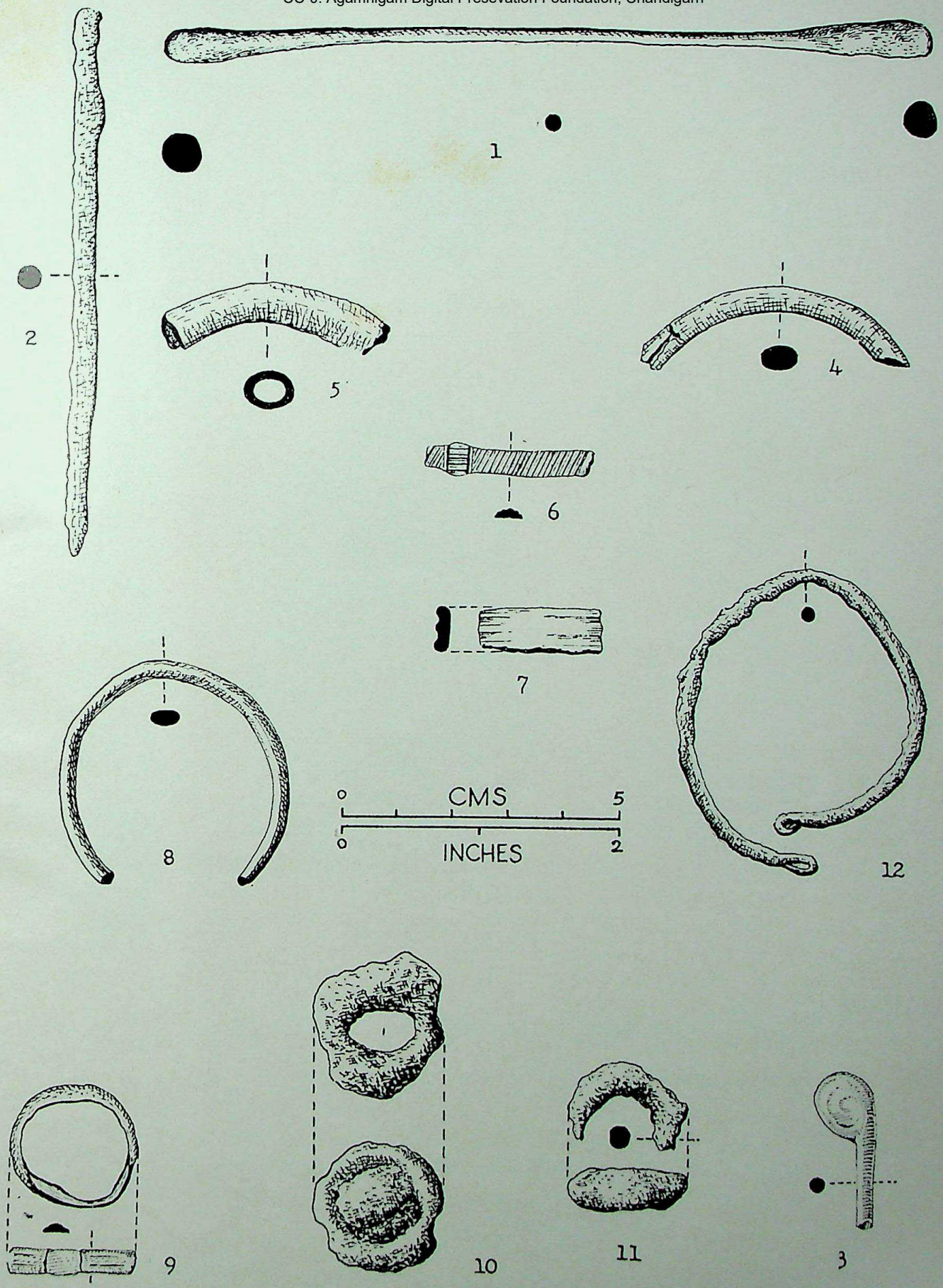

Fig. 184 : Copper Objects [1/1]. Kohl-sticks (1-2), Pin (3), Bangles (4-8), Rings (9-11), Leg Ornament (12). (See pp. 410, 413. 415-416).

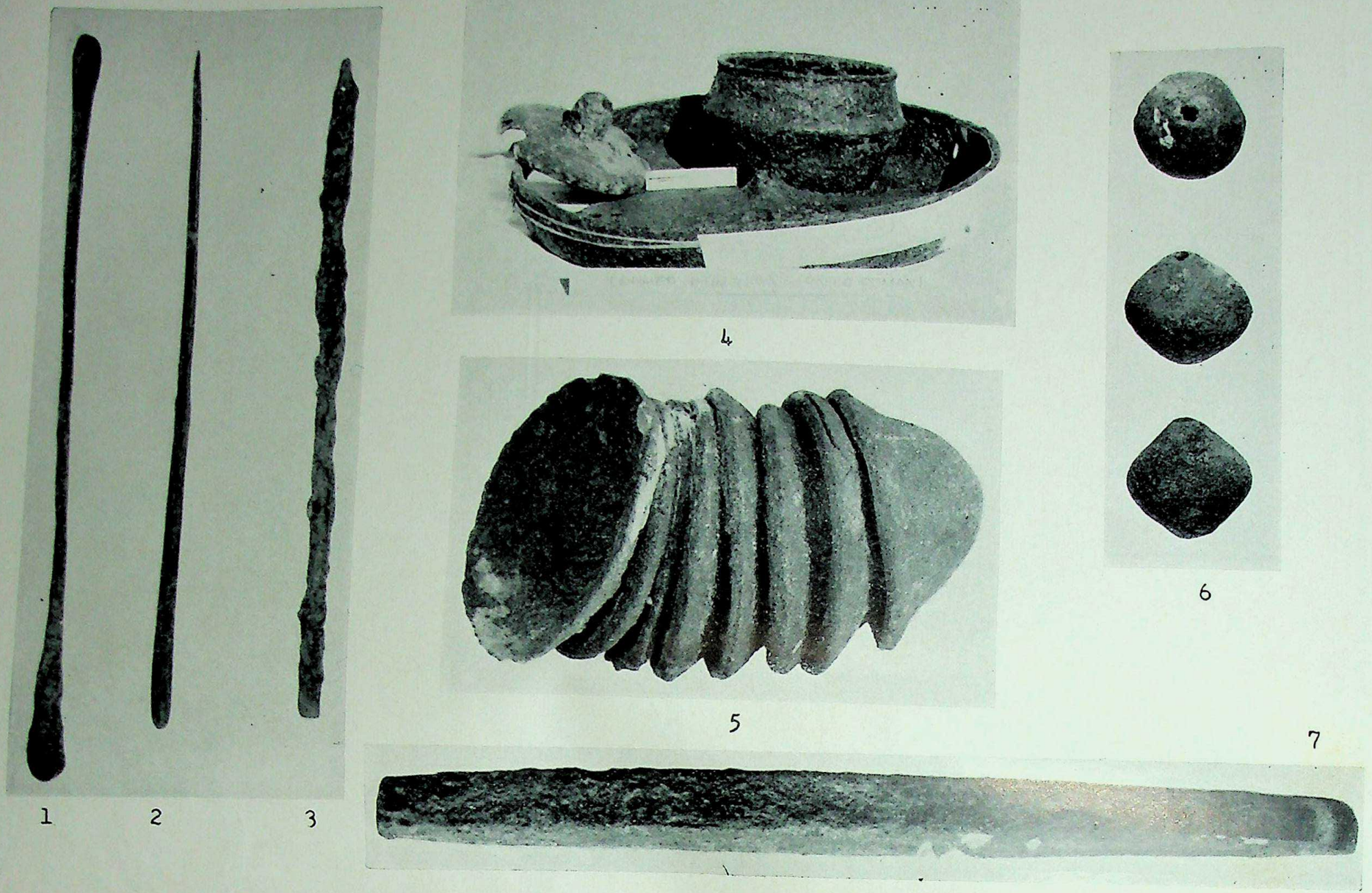

Fig. 185 : Copper Objects. Kohl-sticks (1, 3), Poker (2), Dish (4), Cymbals (5), Beads (6), Chisel (7). (*See pp.* 410, 414, 418, 422).

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(*b*) those with plano-convex section (2)
V, 1; VI, 1.

(*c*) those with rectangular section (3)
IV, 2; V, 1.

(*d*) those with oval section (2).
III, 2.

The dimensions of the above groups are tabulated below:—

Types	Thickness	Diameters
a	(i) 11 mm.	70 mm.
	(ii) 6-8 mm.	70 mm.
b	4 and 5.5 mm.	45 mm. and 80 mm.
c	3 and 4 mm.	56 mm.
d	5 mm.	42 mm. and 45 mm.

The diameters show that bangles were made to suit both the adults and the children. Moreover, some bangles show decorations on the outer surface. These consist of incisions and ridges. Since the surfaces are encrusted it is not possible to say how these decorations were effected.

The illustrated specimens are as under.

Fig. 184 No. 4 Fragment, solid bangle piece, encrusted and cracked. No. 1322, NVS, B, 3. (V). [Type *a*ii].

No. 5 Fragment, hollow bangle piece, heavily encrusted. No. 2396, NVS, I, 3. (IV). [Type *a*i].

No. 6 Fragment, outer surface having slant linear incisions as decoration. No. 4187, NVS, F, 3. (V). [Type *b*].

No. 7 Fragment, broad surface, outer surface having three ridges as decoration. No. 1071, NVS, C, 2. (V). [Type *c*].

No. 8 Three-fourth bangle piece made by hammering a rod, small size, possibly for a child. No. 7329, NVS, F, 11. (III). [Type *d*].

Beads

Nine beads of copper were found. Of these, seven belong to Period III and one each to the two succeeding periods.

These beads may be put into four typological groups, such as biconical, truncated barrel, cylindrical and long barrel.

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Of these, the first are remarkable and present a group of exactly identical three beads. All these were found in a small high-necked pot near a burial of the Chalcolithic period. Though beads of copper or bronze have been reported from the Indus valley sites, none of these are biconical in shape. There is no certainty whether the Mohenjodaro beads were perforated by drilling or in casting.[4] The analysis of the Nevasa beads showed that they were made by hot hammering. The technique of making these hollow biconical beads is exhibited by one of the three. It shows that a sheet of 3 to 4 mm. thickness was so wrapped as to form a cylinder, and then pressed to a biconical shape. The joint of the two ends of the sheet is clearly visible even now. They contain 99.06% copper. The other constituents like tin, etc. might have been natural.

The other beads of the Chalcolithic period are hollow and badly damaged. They seem to have been made of copper sheet, and are very light.

The periodwise distribution of shapes is as follows:

(*a*) Biconical—3; III-3.
(*b*) Truncated barrel—3; III-2; V-1.
(*c*) Cylindrical (?)—I; IV—1.
(*d*) Long barrel—2; III—2.

The illustrated specimens are described be ow.

Fig. 195 No. 10 A complete specimen, biconical, heavy, hollow. No. 8549, NVS, G, 11, (III). [Also *Fig. 185, No. 6*].

No. 11 A hollow and thin-sided truncated barrel bead of copper. No. 7096, NVS, E, 13. (III).

No. 12 A badly pressed bead of copper, originally a cylinder but now appearing triangular barrel, thin-sided and light. No. 2387, NVS, A, 10. (IV).

No. 13 A long barrel bead of copper heavily encrusted, thin and light. No. 7538, NVS, F, 11. (III).

Pendants

Two specimens of what might have been pendants were found. One of them is a dagger pendant and the other is a dumb-bell shaped piece with two perforations. The latter might be either a spacer bead or a pendant. Dagger pendants in other materials have been reported from Taxila in horizons belonging to the 4th-3rd century B.C. and have a wide distribution in the Deccan and Central India.[5]

4. MARSHALL, *MIC*, Vol. II, pp. 507-08.
5. See SANKALIA, SUBBARAO and DEO, *op. cit.*, p. 199.

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The latter specimen has a remote antiquity for similar spacers of copper or bronze have been found at Chanhudaro.[6]

Fig. 195 No 14 Two fragments of probably a dagger-shaped pendant, made of thin sheet of copper, heavity rusted, tip broken, flat broad hilt. No. 5370, NVS, I, 4. (IV).

No. 15 A dumb-bell-shaped spacer-bead with a perforation in each of the two orbs, heavily rusted. No. 4082, NVS, Y, 4. (IV).

Rings

Sixteen specimens of copper finger-rings were found. Of these, none came from Period III, seven came from Period IV, eight from Period V and one from the topmost horizon.

Copper or bronze finger rings have been reported from Mohenjodaro,[7] Chanhudaro[8] and Harappa.[9] These are mostly plain or coiled copper wires. Harappa also yielded a bezelled variety. Rings with elaborately decorated bezels seem to have come into use in the early historical period, a couple of centuries prior and after the Christian era as at Taxila.[10]

The Nevasa rings may be divided into two main groups.

(*a*) ornamental or those having bezels, and

(*b*) plain rings.

Of the sixteen, eleven belonged to group (*a*), three to group (*b*), and the rest were fragmentary.

Rings of group (*a*) were either with a circular section or with a plano-convex one. The diameters of the former varied between 17 mm. and 20 mm., and those of the latter between 24 mm. and 32 mm. The corresponding thickness was 4 mm. and 6 mm.

The illustrated specimens are three.

Fig. 184 No. 9 A complete specimen of a copper ring with plano-convex section, heavily rusted and plain. No. 5481, NVS, E, 7. (V). Group (*b*).

No. 10 An almost complete specimen of possibly a ring, heavily encrusted, broad hollow bezel possibly for inlay. No. 1429, NVS, X, 3. (IV) Group (*a*).

No. 11 Fragment of a ring, circular in section, broad flat bezel, heavily rusted. No. 3345, NVS, F, 4. (V). Group (*a*).

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6. MACKAY, *op. cit.*, pl. LXXX, Nos. 10 and 13.
7. MARSHALL, *MIC*, p. 505.
8. MACKAY, *op. cit.*, p. 193.
9. VATS, *op. cit.*, pp. 447-48.
10. MARSHALL, *Taxila*, Vol. II, pp. 646.

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Leg Ornament

A leg ornament made out of copper wire and with ends out-turned was found in the layers of Period V. This type of leg ornament is used even now in the Deccan and is made of copper. Such a copper '*vāḷā*' (Marathi) is supposed to strengthen the legs of a child as copper is known to be a good conductor of electricity.

Fig. 184 No. 12 An intact leg-ring with the ends out-turned, heavily rusted. Thickness 5 mm. No. 906, NVS, I, 2. (V).

(iii) Tools and Weapons

These comprise blades, hooks, chisel, poker, nails etc. Most of these are in an extremely encrusted state and hence in many cases, their section could not be determined.

Blades

Four heavily rusted blade-like pieces were found. Of these one belongs to Period III, two to Period IV and one to Period VI.

The fragments show long triangular sections and hence they might have been used for cutting purposes. However, nothing definite can be said as the pieces are extremely corroded and are fragmentary.

Only two of these are worth illustrating.

Fig. 186 No. 1 Fragment of a copper blade with bevelled end, thin elongated drop-like section. Breadth 16 mm. thickness 3 mm. No. 1618, NVS, D, 3. (V).

No. 2 An almost complete triangular object with one side slightly convex, made of copper sheet, looks like a sharp axe with two sides concave and the cutting edge convex, possibly tied to something when in use. Length of cutting edge 158 mm., thickness 2 mm. No. 8307, NVS, F, 12. (III).

Hooks

Of the four, none came from Period III; three came from Period IV and one from the succeeding period.

All these are alike, i.e. simple rods of copper turned to a sharp point. None is of the barbed variety. The thickness of the rod approximates 3 mm. to 4 mm.

Fig. 186 No. 3 An almost complete specimen with one end pointed and curved, rod round in section. Length 40 mm. No. 3673, NVS, Y, 4. (IV).

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Nails

Of the two specimens, one each belonged to Periods V and VI. They exhibit two varieties, e.g., (*a*) with round body and flat outspread head, and (*b*) flat-bodied nail with a sharp pointed end.

Fig. 186 No. 4 A complete specimen with a short round body and flat head. Length 24 mm. and thickness 6 mm. No. 2131, NVS, A, 2. (V). Type (a).

No. 5 An almost complete nail with flat body, sharp pointed end and split head. Length 53 mm. and thickness 4 mm. No. 103, NVS, F, 1. (VI). Type (b)

Chisel

The single specimen coming from the topmost of the Chalcolithic levels is notable for shape and method of making.

Chisels of copper or bronze have been reported from the Indus valley sites.[11] But they differ entirely from the specimen found at Nevasa. Those at Harappa and Mohenjodaro show three varieties, e.g., (*a*) with long flattened shanks, (*b*) small chisels with burred butts—these two being the most common both at Harappa and Mohenjodaro. The third variety *viz.* that which is round in section is rare at Mohenjodaro. As compared to these, Chanhudaro yielded chisels of five main varieties, all belonging to the Harappa Culture. Some of these chisels possibly had a bamboo handle.

According to MARSHALL, double-slope edged chisels have been found in Egypt. Sumerian and Susa specimens also are double-sloped. A single-sloped chisel comes only from Egypt (1st dynasty). These are absent in the Indus valley.

The chisels of the Indus sites were meant for varied type of work such as working on wood, or soft stones or for graving. However the chisels of the splayed edge as found at Mohenjodaro are not suitable for deep mortice cutting.

The Nevasa specimen is a rectangular rod with a sharp double-sloped edge. That it was made by hammering a circular rod into a rectangular one is indicated by the overlapping edges of the body. The head which is

11. MARSHALL, *MIC*, II, pp. 502-04; VATS, M.S., *Exc. at Harappa*, I, pp. 387-88; MACKAY *Chanhudaro Excavations*, pp. 184-85.

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squarish and flat is slightly less in dimensions than the dimensions of the body. The head is convex and spread out, possibly due to hammering.

The spectographic analysis showed that it contains 94.41% copper and 2.72% tin. The high percentage of tin might be deliberate. The report says, "....structure....consists of a fine grained single phase alloy. There is evidence of dendritic segregation which is typical of cast alloys. But these dendrites have been broken up with a good measure of success, which indicates the use of hot forging, after the casting process. It appears that the chisel was hot forged and the forging process was finished just above the re-crystallization temperature (say at 500° C) as the metal is re-crystallized but has very fine grain structure."[12]

Fig. 186 No. 6 A complete chisel, rectangular section, head slightly spread out due possibly to hammering in use, other end double-sloped to meet in a sharp edge. Length 158 mm. Maximum thickness 10 mm., width of cutting edge 9 mm. and breadth of head 8 mm. No. 6721, NVS, E, 14. (III). [also *Fig. 185, No. 7*].

Poker

This is a long, thin rod of copper with one end tapered to a very sharp point and the other bulbous and solid. It might have been used as a poker or as a needle for engraving or nail-cleaning.

Fig. 186 No. 7 An intact piece with one end pointed sharp, and the other solid and bulbous. Length 125 mm., maximum thickness 4 mm. No. 6721 a, NVS, F, 11. (III). [also *Fig. 185, No. 2*].

Rods

Several fragmentary rods of copper were found. As most of these were extremely corroded, their exact shape as also their use could not be ascertained. It is, however, likely that some of these might have been used as kohl-sticks.

Of the six, save one, all the rest belong to Period IV. The one that remains came from Period III.

Fig. 186 No. 8 A square-cylinder of copper, solid and heavy, slightly rusted. No. 7523, NVS, H, 12. (III).

No. 9 Fragment, rusted bulbous head, body tapering, tip broken, might be a kohl-stick, No. 6631, NVS, E, 8. (IV).

12. See Appendix No. 3.

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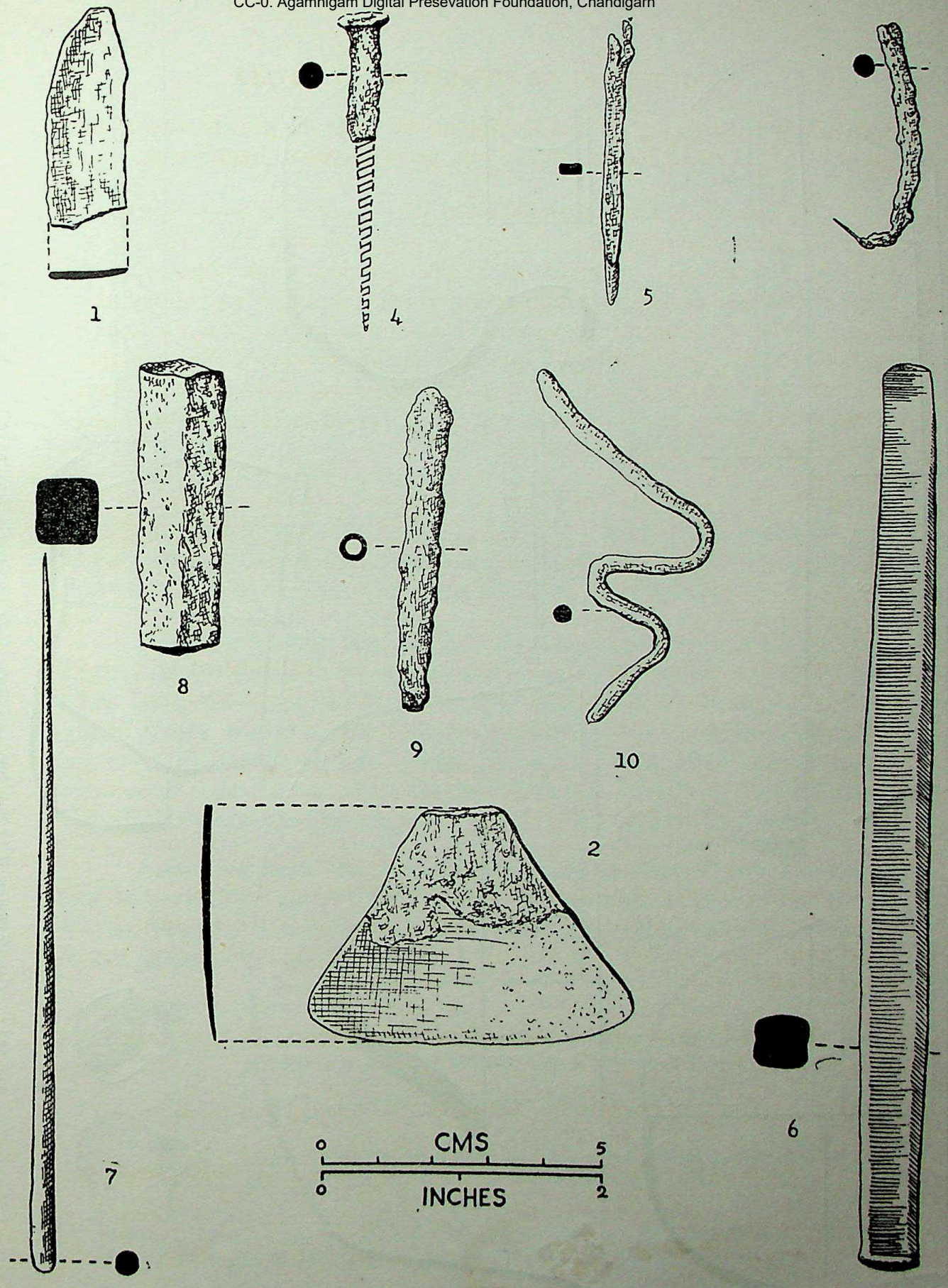

Fig. 186 : Copper Objects [1/1]. Blades (1-2), Hook (3), Nails (4-5), Chisel (6), Poker (7), Rods (8-9), Wire (10). (See pp. 416-418, 421).

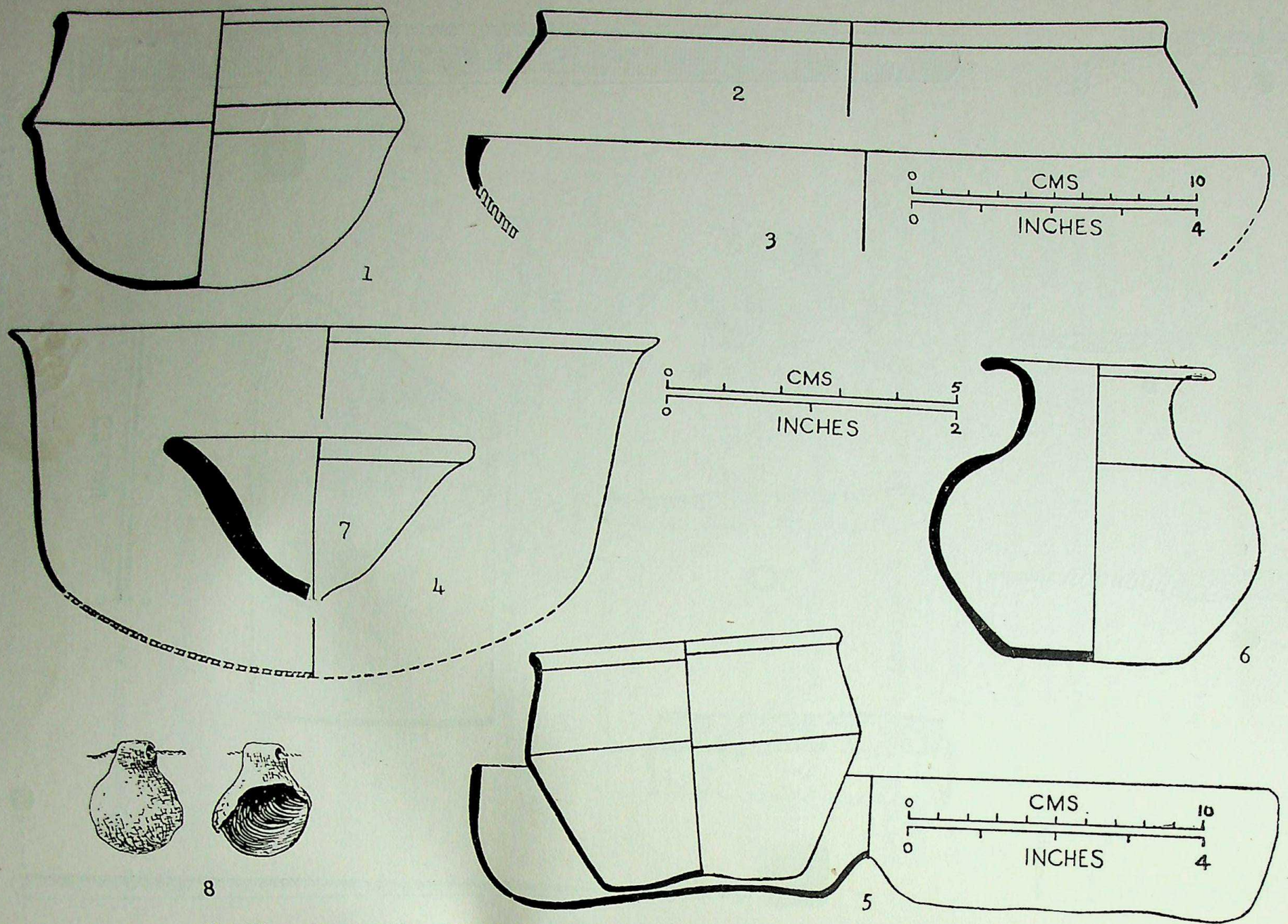

Fig. 187 : Copper Objects [1/1]. Pots, bowls and dishes (1-6), Cymbal (7), Tinkling bell (8). (See pp. 421-422).

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METAL OBJECTS

Wires

Six copper wire pieces were found. Of these, five belong to Period IV and one to Period VI. All these are heavily rusted. Purpose and use uncertain.

Fig. 186 No. 10 An intact piece, 4 mm. thick, round in section, now zig-zag in outline, ends slightly bulbous, might be a kohl-stick. No. 3938, NVS, Y, 4. (IV).

(iv) POTS AND UTENSILS

Six pots and vessels of copper were found. They represent a variety of shapes. Of the six, one came from Period III, four from Period V and one from Period VI.

Of these, two are noteworthy. The one coming from Period III was found near a skeleton and represents a rimless bowl with flat edge and thin sides. It is likely that it had some funerary sagnificance.

The other is a dish with a boss in the centre and comes from Period V. Exactly similar dishes in terracotta, cast copper, grey micaceous schist and silver have been reported from Taxila.[13] According to MARSHALL, their origin can be traced to the '*phiale mesomphalos*' of the Greeks (3rd-2nd century B.C.) and the Roman '*patera clipeata*'. Most of the Taxila specimens come from Sirkap where they are found to have been "copied from Hellenistic or Graeco-Roman prototypes". (Fig. 187, No. 5, below)

Associated with the votive tanks, red polished ware, amphorae and Megarian-like pottery, this dish at Nevasa can be put to the Indo-Roman Period (V) and by itself is indicative of foreign cultural influence in this phase of Nevasa habitations.

All these are illustrated.

Fig. 187 No. 1 An almost complete bowl with a ridge at the shoulder, round base, bulbous edge, concave bottom, thin sides. No. 1487a, NVS, H, 7. (V).

No. 2 Fragment, globular pot, straight short rim, thin sides. No. 1478, NVS, D, 3. (V).

No. 3 Fragment, rimless bowl with flat edge, sides getting thinner towards the base. No. 7129, NVS, Z, near Skeleton No. 14. (III).

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13. MARSHALL, *Taxila*, Vol. II, pp. 418, 592, 490, 612-15; pl. 124, No. 109 (t.c.); pl. 175 No. 289 (copper); pl. 140, n, p, (schist), pl. 187, No. 10; pl. 188, No. 10 (silver).

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No. 4 Almost a complete vessel reduced to pieces, straight sides, slightly out-turned edge, inner surface shows signs of hammering. No. 1732, NVS, I, 2. (V).

No. 5 A complete dish with straight sides, a tapering boss in the centre, base concave so that the dish rests on the periphery of the base, another short *lotā*-like vessel sticks to the dish; it has a knobbed lid. No. 1253, NVS, I, 2. (V). [also *Fig. 185, No. 4*].

No. 6 A complete small vessel with flat base, high neck and spread-out rim. Similar vessels are even now used in worship or as toys. No. 3433, NVS, H, 1a. (VI).

(v) Musical Objects

These consist of a copper rattle (tied around the neck of bullocks) and a group of eight cymbals. The latter are stuck together due to rust. Both these belong to Period V.

Contemporary and similar rattles are reported from Brahmagiri[14] where they are decorated in relief with a grotesque face. The Maheshwar[15] specimen is simple and bears a close resemblance in make and period to the one from Nevasa.

The four pairs of cymbals are exactly like the modern ones. They were found in association with a big white conch. The conch and the cymbals form an important item at the singing of devotional songs even now. Cymbals similar to these are depicted in an earlier fresco in Cave No. 1 at Ajanta.

Fig. 187 No. 7 A group of eight copper cymbals stuck together, a central perforation to pass a thread through as these are used in pairs. No. 719, NVS, C, 2. (V). [Also *Fig. 185, No. 5*].

No. 8 Half of a tinkling bell or rattle, round in shape, thin, with a horizontally perforated knob-head. Diameter 17 mm. and thickness 2 mm. No. 1617, NVS, H, 2. (V).

(vi) Miscellaneous Objects

Besides the objects described above, thirty-seven extremely fragmentary and heavily corroded pieces of copper were picked up at different levels in the excavation.

From their present condition it is very difficult to ascertain their original nature.

(B) GOLD OBJECTS

The gold objects were not many. Most of the intact pieces were beads. The rest were gold leaf fragments. It has already been noted that

14. *A.I.*, No. 4, p. 268, Fig. 41, No. 9 (bronze).
15. Sankalia, Subbarao and Deo, *op. cit.*, Fig. 109, No. 8.

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shell bangles with a grooved exterior were inlaid with gold leaf for decoration. This practice is even now current among the Marwaris. Besides this, gold leaf was also used in glass beads in between two layers of glass.

Most of the beads consisted of gold leaf which acted as a coating over a lacquer body. Among the solid specimens, tiny spacer bead is remarkable. The most noteworthy specimen, however, is the cobra-head of gold with a horizontal perforation. The bead has the triple cobra-hoods on both sides of the bead. It is likely that it was used as an amulet. Snake-god pendants in faience go back to the 12th dynasty in Egypt.[16] However, a clearer specimen occurs on the coins of the Andhra dynasty where it has been designated as a 'Nāga Symbol' by RAPSON.[17] A similar symbol also occurs at the beginning of the record of Khāravela.[18] It is also found on the Toraaṇs at Sanchi.[19] Similar in shape but different in motif and material, it occurs at Kondapur[20] and has been designated as '*Śrī-vatsa* symbol bead and dated to Andhra levels.

The Nevasa cobra-bead datable to Period V, differs from Kondapur specimen inasmuch as there is a distinct cobra hood depicted on the former. The vertibra below the neck is delicately executed and the whole workmanship is precise.

Beads

Fig. 195 No. 7 A Naga-hood, much pressed and now flattened, thin gold leaf, hollow, horizontally perforated, serpent amulet (?). No. 3893, NVS, F, 5. (V). [also *Fig. 171, No. 10*].

No. 8 A group of three tiny circular beads joined horizontally, a small perforation at the top of the topmost bead, spacer bead (?). No. 1056, NVS, G, 2. (V). [also *Fig. 171, No. 9*].

No. 9 Gadrooned bead of gold leaf, core possibly of lacquer. No. 406, NVS, Y, 1. (VI). [also *Fig. 171, No. 7*].

Nose Ornament (?)

Fig. 171 No. 6 Fragment of a gold wire piece with one end crescent-like possibly to contain some semi-precious stone, might be a nose-ornament. No. 1014, NVS, A, 2. (V).

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16. BECK, H., Classification and Nomenclature of Beads and Pendants, *Archaeologia*, Vol. 77 (1927), p. 38.
17. *CIC*, pl. VIII, No. 207, Feudatories of Andhra dynasty.
18. SIRCAR, D.C., *Select Inscriptions*.
19. BACCHOFER, *Early Indian Sculpture*, I, pls. 49-51.
20. DIKSHIT, M.G., *Beads from Kondapur*, pl. V, No. 220; also *ABORI*, XXII, pl. XII, 10th row, Kondapur beads are of terracotta.

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Rosette

Fig. 171 No. 8 Fragment of a circular gold leaf with rosette design in relief, possibly a part of the ear-stud or pendant.[21] No. 2215, NVS, D, 5. (V).

The unillustrated specimens represent a tiny cylinder of gold badly pressed, and a tablet bead in similar condition. The latter comes from Period IV, while the former from Period V.

(C) IRON OBJECTS

As remarked elsewhere, iron was introduced at Nevasa in Period IV which starts round about the 2nd century B.C. or so. However, its extensive use is attested to only by the layers of the succeeding period.

A remarkable variety of iron objects has been unearthed at Nevasa. These objects can be conveniently grouped into the following categories.

(*a*) Tools and weapons,

(*b*) Pots and utensils,

(*c*) Other objects of household use,

(*d*) Ornaments, and

(*e*) Miscellaneous objects.

(*a*) Tools and Weapons

These comprise chisel, blades, arrowheads, tangs of blades, sickles, spearheads, adze, scraper, hooks and drill.

Arrowheads

Seven arrowheads were found. All these are tanged. No socketted specimen was found. Of the seven, two come from Period IV and the rest from the succeeding one.

These can be divided into four categories as follows:

(*a*) leaf-shaped—length 57 mm., Breadth 19 mm. and 12 mm., V—4.
(*b*) Trefoil-tipped—IV—1.
(*c*) Spiked—IV, 1, and
(*d*) arrowhead with short triangular blade—V-1.

Of these, type (*b*) and (*c*) are also reported from Nasik from more or less same period.[22]

21. Dikshit, M.G., *op. cit.*, Pl. V, No. 216, (in t.c.) Andhra levels.
22. Sankalia, and Deo, *op. cit.*, Fig., 53, No. 7; 52, No. 9.

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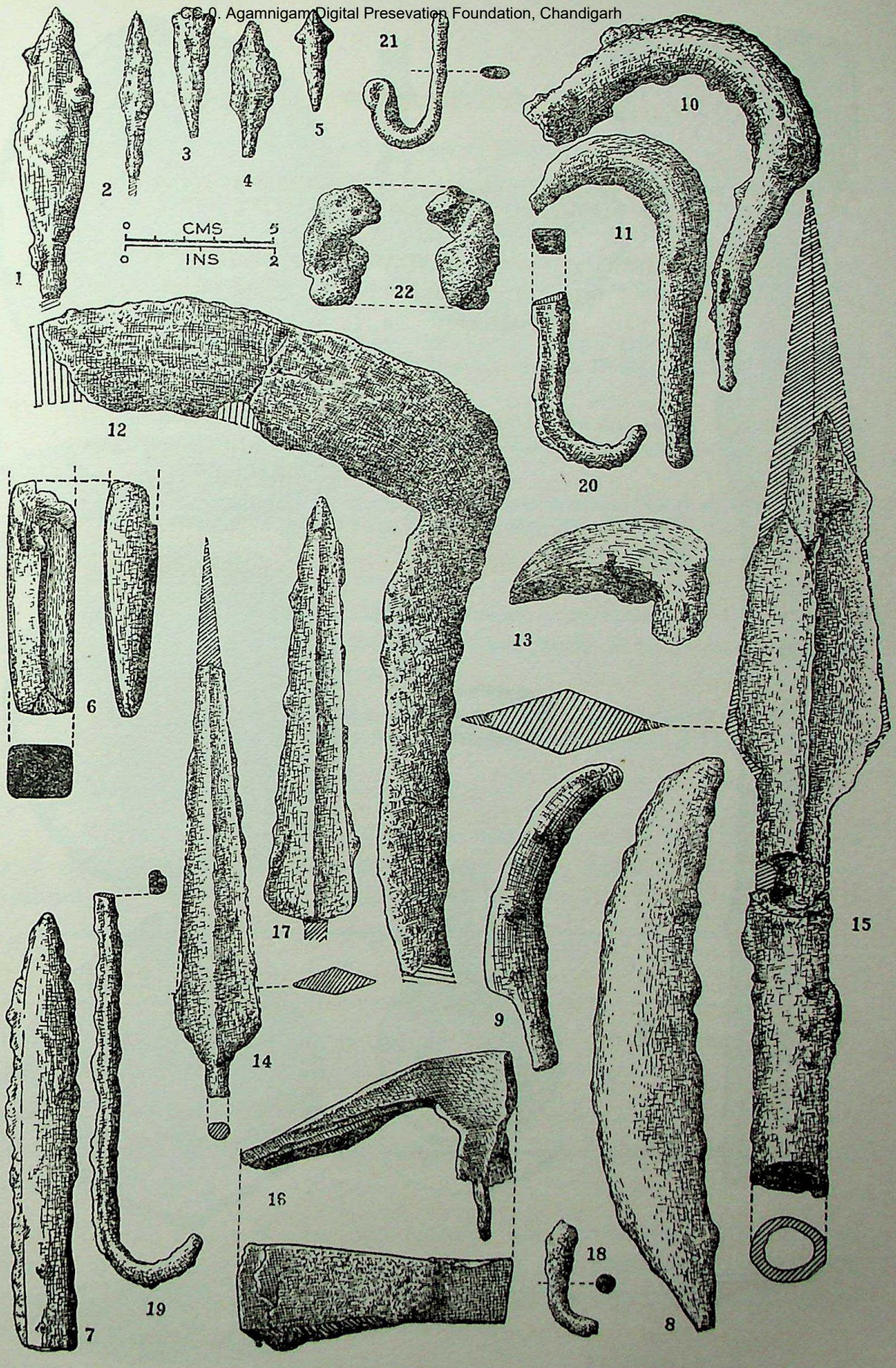

Fig. 188 : Iron Objects [1/2]. Arrowheads (1-5), Chisel (6), Knife-blades (7-9), Sickles (10-13), Spearheads (14-15, 17), Adze (16), Hooks (18-21), Drill (22). (See pp. 427-30).

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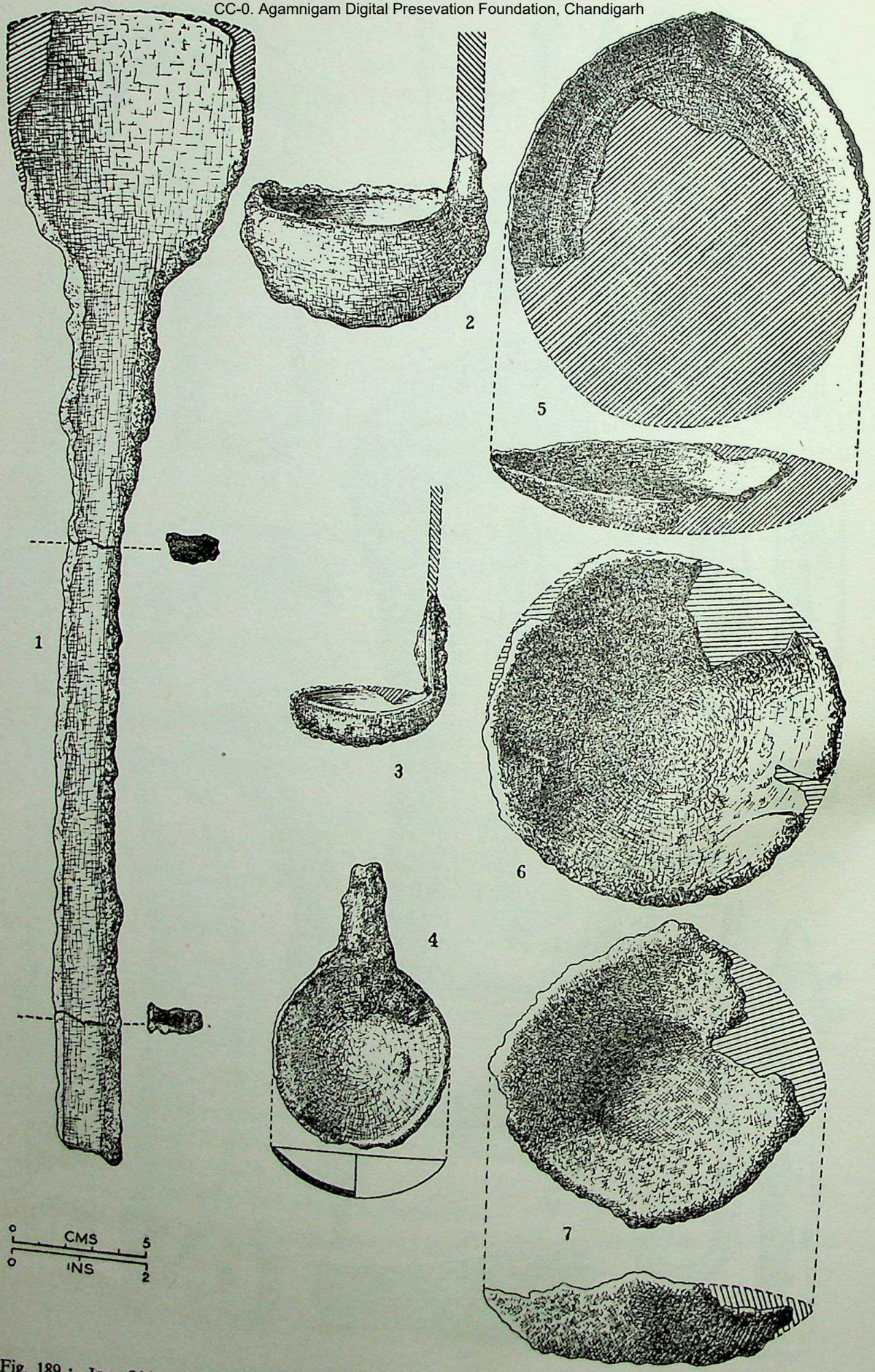

Fig. 189 : Iron Objects [1/2]. Frying shovel (1), Ladles (2-4), Pans and Dishes (5-7). (See pp. 430-432).

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METAL OBJECTS

The following representative specimens are illustrated.

Fig. 188 No. 1 An almost complete arrowhead with a broken tang having a circular section, blade leaf-shaped and having a biconvex section. Length 98 mm., breadth 17 mm. No. 5732, NVS, H, 6. V. [Type *a*].

No. 2 A complete specimen, as above, but thin, less broad and more elongated tang, possibly square in section. Length 57 mm., breadth 12 mm. No. 3619, NVS, E, 4. V. [Type *a*].

No. 3 A complete specimen, biconvex in section, tanged, blade-head having a trefoiloutline. Length 39 mm., breadth 15 mm. No. 1342,NVS, X, 3. IV. [Type *b*].

No. 4 Almost complete specimen, tang broken but round in section, blade four-faced spikelike. Length 48 mm., breadth 13 mm. No. 1431, NVS, X, 3 IV. [Type *c*].

No. 5 A complete specimen, tanged, round in section, short pointed triangular head. Length 35 mm., breadth 13 mm. No. 4646, NVS, G, 4. V [Type *d*].

Chisel

A single specimen, heavily encrusted, was found in the layer of Period IV. It is double-sloped and with the body rectangular in section. Similar iron chisels are even now in use.

Fig. 188 No. 6 Heavily encrusted and fragmentary piece, double-sloped to form a sharp cutting edge, body rectangular in section. No. 2810, NVS, Y, 4. IV.

Knife-blades

Knives were represented by as many as forty-four blade pieces and sixty-three tangs with a part of the blade. Their distribution is as follows :

	IV	V	VI
Blades ..	12	23	9
Tangs ..	16	39	8

It will, thus, be seen that during Period V (Indo-Roman) iron was in extensive use.

Of the intact blades, two features are noteworthy. First is that almost all these are tanged pieces. Secondly the blades always end in a point. Not a single specimen was found which had the blade consisting of a straight strip of iron without a pointed end.

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The intact pieces could be grouped into the following three varieties.

(*a*) those with straight blades—V:2

(*b*) those with plano-convex blades—V:1; VI:1

(*c*) those with concavo-convex blades—V:1; VI:1.

These are illustrated as below.

Fig. 188 No. 7 Two pieces of a tanged knife blade, triangular in section, heavily rusted. Breadth 19 mm., length 144 mm. [Type *a*]. No. 2091, NVS, A, 7. IV.

No. 8 A concavo-convex knife blade with a broken tang, heavily rusted. Breadth 33 mm., length 192 mm. No. 1382, NVS, B, 3. V. [Type *c*].

No. 9 A complete blade of a knife as above but smaller in size. Breadth 15 mm. No. 7208, NVS, H, 9. IV. [Type *c*].

Sickles

Sixteen specimens of sickles were found. Of these, two came from the layers of Period IV and the rest from Period V.

The abundance of sickles in the layers of Period V is significant as these also yielded a variety of grains. It thus becomes evident that sickles were used for agricultural field work in this period at Nevasa.

The sickles resolve themselves into the following three groups.

(*a*) crescent-shaped curved blades, IV:1; V:12

(*b*) horizontal, broad blades, V:1 and

(*c*) short, broad blades IV:1; V:1.

All these are heavily rusted and it is not possible to ascertain the sections of the blades.

The four pieces are illustrated.

Fig. 188 No. 10 Fragmentary sickle with tip of curved blade broken, heavily encrusted, long tang. Breadth 25 mm. No. 1813, NVS, X, 3. IV. [Type *a*].

No. 11 Fragment as above but smaller, blade less wide. Breadth 21 mm. No. 1825, NVS, D, 5. V. [Type *a*].

No. 12 An almost complete sickle with a thick tang, blade not prominently curved, broken into two pieces, heavily encrusted. Breadth 39 mm. No. 1361, NVS, B, 3. V. [Type *b*].

No. 13 Fragment of a sickle with short plano-convex blade, tang broken. Breadth 25 mm. No. 6916, NVS, H, 8. IV. [Type *c*].

Spearheads

Eight pieces of spearheads were found. Of these, two were socketted specimens, three tanged and the rest were blade fragments.

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Their periodical distribution shows that most of these are concentrated in the levels of Period V whereas one each comes from Periods IV and VI.

The evidence at hand is too meagre for any generalization. But as it stands, it shows that the socketted and the tanged varieties were contemporaneous in use.

The maximum extant breadth of the socketted variety (*a*) was 51 mm. while that of the tanged specimens (*b*) was 35 mm. The maximum extant length of the latter was 177 mm.

Fig. 188 No. 14 An almost complete specimen of a spearhead with the tip broken, tang circular in section and fragmentary. Length 145, breadth 29 mm. No. 396, NVS, Y, 1. VI. [Type *b*].

No. 15 Fragment, heavily encrusted, with a long socketted end. No. 1570, NVS, D, 3. V. [Type *a*].

No. 17 Fragment, tapering pointed spearhead, tang broken. No. 1655, NVS G, 4. V. [Type *b*].

Adze

Adze was represented by a single piece which was heavily rusted. It has a flat side and a tang at an angle to the body. The tang was fixed in a wooden handle as is done even now.

Carpentry tools like adze, scraper and others go well with the extensive house-building activity so characteristic of Period V in the levels of which these tools were found. Such houses had wooden posts and it is likely that these tools were used in trimming the posts and such other jobs.

Fig. 188 No. 16 A tanged adze with the blade having a section tapering towards the broad cutting edge. No. 2097, NVS, G, 2. V.

Pick-axe

A single specimen was found.

Fig. 191 No. 9 A complete piece with a round socket, other end thinner, convex and sharp. No. 1945a, NVS, B, 4. V.

Hooks

Of the four hooks, one each came from Periods IV and VI and two from Period V.

All the specimens are plain hooks with curved and sharp ends shaped out of iron rods. These can be resolved into the following groups.

(*a*) those having circular section: IV—1; V—1.

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(*b*) that with a square section: V—1; and

(*c*) that with rectangular section: VI—1.

Four of these are illustrated.

Fig. 188 No. 18 Fragment of a small hook with the tip broken, head-end thick and encrusted. No. 4090, NVS, G, 8. IV. [Type *a*].

No. 19 Four fragments of a hook, round in section. No. 2813, NVS, D, 5. V. [Type *a*].

No. 20 Fragment, hook with a square section, tapering pointed tip. No. 855, NVS, F, 2. V. [Type *b*].

No. 21 Fragment, hook made out of a strip of iron, rectangular in section, the tip heavily rusted. No. 319, NVS, I, 1. VI [Type *c*].

Drill

A doubtful specimen of probably a drill came from the levels of Period IV. It is heavily encrusted as also broken at the tip.

Fig. 188 No. 22 Fragment of possibly a drill made out of an iron strap wound spirally, tip broken. No. 3671, NVS, Y, 3. IV.

(*b*) Pots and Utensils

This category comprises pots, and household apparatus like frying shovels, ladles, bowls, pans etc.

Several of these were found right on the floors of different houses and must have formed articles of everyday use by the occupants in cooking. It is remarkable to note that the shapes of these objects have continued unchanged even today.

Small-pot (?)

Fig. 190 No. 1 An intact piece, heavily encrusted, possibly a pot with a flat base and a ringed concavity above it, the upper half shallow and hollow. No. 5958, NVS, G, 8. IV.

Frying shovels

Of the two shovels, one is complete. Though both are heavily encrusted, their shape is identical with the present day shovels used in cooking in the Deccan.

Fig. 189 No. 1 A complete specimen of an iron frying shovel with a flat broad head, long handle with a rectangular section, tip broken. Length 396 mm., breadth of head 83 mm. No. 5400, NVS, A, 5. V.

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Ladles

Ladles were represented by six specimens which resolve themselves into two groups.

(*a*) those with a straight horizontal hold: IV-2; V-2.

(*b*) those with vertical holds; V-2.

Similar ladles have been reported from Taxila where they have been assigned to the early centuries of the Christian era. The Nevasa specimens thus push their antiquity prior to the Christian era.

Those belonging to type '*b*' might have been used as lamps as well, as is the case in the Deccan area. These are called 'lāmaṇa divā' which are associated with some marriage rites among the Hindus. However, due to heavy encrustation it is not possible to detect the wick-projection. Thus type '*b*' might have been used either as ladles or as lamps.

Now-a-days ladles with vertical and horizontal holds and made either of iron or brass are used. At Nevasa those with horizontal holds are earlier (Period IV) whereas those with vertical holds are restricted to Period V. The diameters of the bowls of these ladles vary between 81 mm. and 51 mm. for type '*a*', and 61 mm. and 66 mm. for type '*b*'.

Representative specimens are illustrated below.

Fig. 189 No. 2 The lower bowl of a ladle with traces of a vertical hold. No. 1681, NVS, B, 5. V. [Type *a*].

No. 3 Similar to above, but with a shallow bowl smaller in size, vertical rod hold. No. 1945, NVS, B, 4. V. [Type *a*].

No. 4 Fragment of a ladle with a horizontal hold, ladle-bowl shallow, heavily rusted. No. 1934, NVS, X, 3. IV. [Type *b*].

Rimless Bowl

Pots and utensils of iron were few as compared to the number of domestic apparatus that was unearthed at Nevasa. Besides the small pot described above, a single bowl of iron was found. It belongs to the horizon of Period IV which yielded similar bowls in the black-and-red ware.

Fig. 190 No. 2 Fragment of a rimless bowl with rounded edges, uniform thickness, rounded bottom. No. 1933, NVS, I, 3. IV.

Pans or Dishes

Pans were represented by three specimens, all coming from the layers of Indo-Roman Period (V). Though rusted and fragmentary, it

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will not be wrong to suggest their use as frying pans. Similar things are used for frying purposes even now in the Deccan.

Fig. 189 No. 5 Fragmentary shallow dish, sides low and flaring. No. 3204, NVS, E, 4. V.

No. 6 Three-fourth of a dish with flat base, walls low and flaring, uniform thickness. No. 7832, NVS, H, 3. V.

No. 7 Fragment, smaller than above, ringed decoration demarcating inner base, sides low and convex. No. 3786, NVS, G, 4. V.

(C) Objects of Household and Structural Use

This group comprises objects like nails, clamps, pounder, door-rings, pegs, lamps, etc.

Clamps

About a score and four pieces of what might have been clamps were found. Of these, six came from the layers of Period IV, seventeen from V and one from VI.

Clamps of iron secured with the help of nails have been reported from 1st to 5th century A.D. levels from Taxila.[23] The Nevasa specimens push their antiquity back by at least a couple of centuries. Moreover, the specimens from Nevasa show a better variety of clamps than their Taxilan counterparts. These are as follows :

(*a*) iron rods with two ends bent downwards—IV, 1; V, 5. Length—40 to 70 mm. Thickness 5 to 9 mm.

(*b*) flat strips with revetted holds—IV, 3; V, 10. Extant max. length—138 mm. breadth 37 and 15 mm.

(*c*) squarish frames with downward spikes—IV, 2.

(*d*) strips with rounded edges and perforations (for inserting nails through). VI, 1.

(*e*) rods with spread heads at both the ends. V, 2.

The exact use of these specimens could not be ascertained. But since some of these were found along with a group of rotary querns, it is likely that these clamps were associated with the horizontal wooden rod inserted in the neck of such querns.

The representative specimens are illustrated.

Fig. 190 No. 3 A complete specimen, heavily rusted, two ends bent downwards. No. 1645, NVS, G, 2. V. [Type *a*].

23. Marshall, *Taxila*, Vol. II, pp. 557-58; III, pl. 168, Nos. 167-71.

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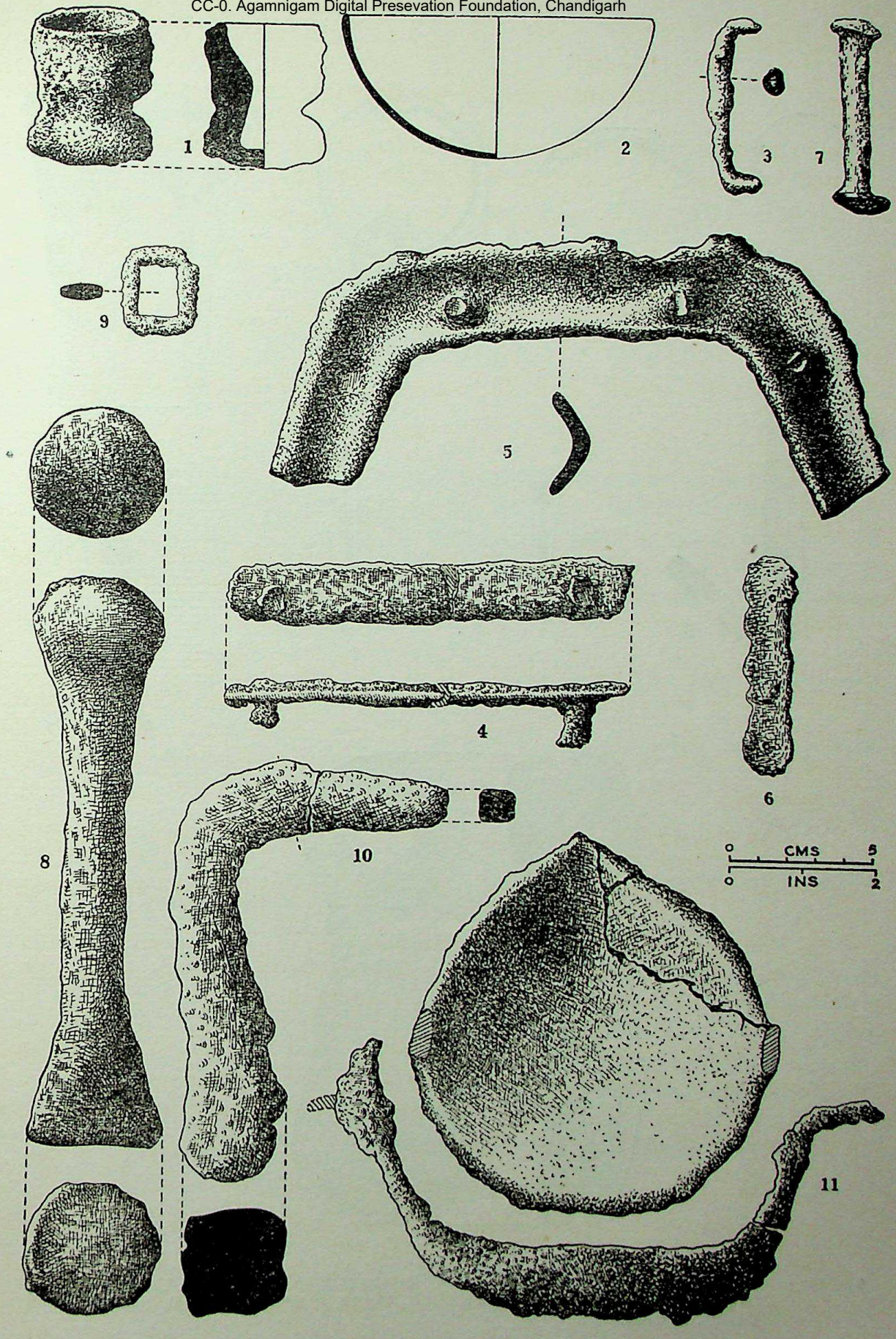

Fig. 190 : Iron Objects [1/2]. Small pot (1), Bowl (2), Clamps (3-7), Pounder (8), Seal (9), Peg (10), Lamp (11). (See pp. 430-431, 435-437).

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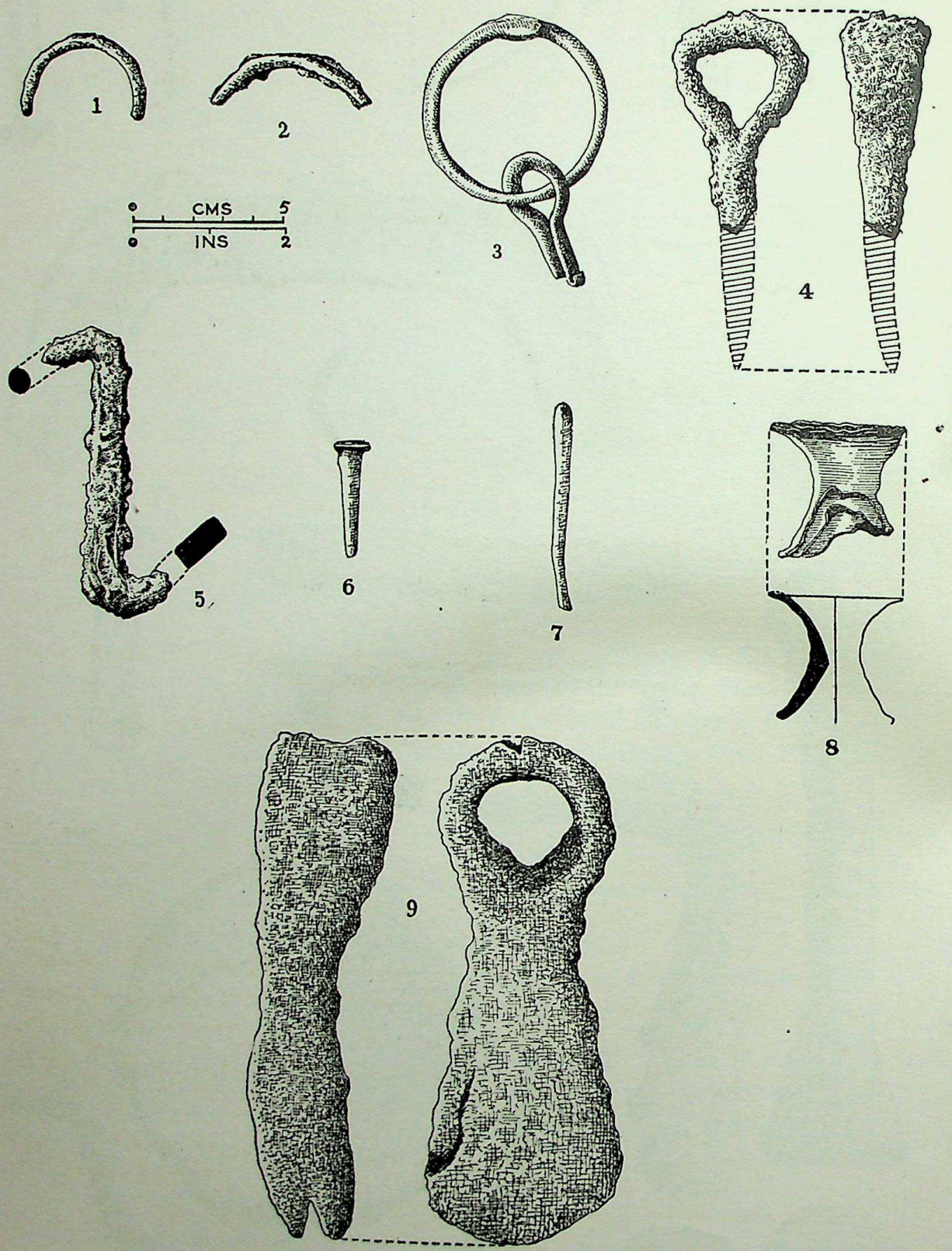

Fig. 191 : Iron, Lead and Silver Objects [1/2]. Iron : Bangles (1-2), Door-rings (3-4), Unidentified Object (5) ; Lead Objects : Nail (6), Kohl-stick (7). Objects of Silver : Stand (8). Iron : pick-axe (9). (See pp. 429, 438, 440).

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Fig. 190 No. 4 Fragment, strip with two revetted spikes, one end rounded off. No. 5530 NVS, E, 7. V. [Type *b*].

No. 5 Fragment, concave interior with spikes affixed, complete shape cannot be ascertained, heavily rusted. No. 5641, NVS, E, 9. IV. [Type *c*].

No. 6 A complete specimen with concave ends, and two perforations (for nails) No. 622, NVS, X, I. VI. [Type *d*].

No. 7 A complete specimen having a central circular rod with spread heads at both ends. No. 5485, NVS, E, 7. V. [Type *e*].

Ring-holds of Iron

This group consists of sixteen specimens made of strips of iron reduced to a circular form. These are neither ornamental rings nor are they bangles. Their probable use might have been as holds for joints or support for a wooden end of an implement. In view of the association of carpentry and agricultural tools with these, the explanation given above appears reasonable.

Almost all these are heavily rusted and many are fragmentary. Their diameters vary between 66 and 84 mm. and breadth between 13 and 40 mm.

Six belong to Period IV and seven and three to Periods V and VI respectively. None of these is illustrated.

Nails

Eighty-six complete and twenty-nine fragmentary nails were picked up in the excavation. All these are heavily rusted.

It is apparent that nails could be put to various uses. But one such use at Nevasa was for fixing the tiles to the rafters of the roof of a house. Several tiles and nails found together confirm the above observation, which has been corroborated by similar association at Nasik, Karad, Prakashe, Bahal, Ter in the Deccan and also at sites outside the Deccan.

The complete specimens resolve themselves into the following types:

(*a*) headless with a tapering squarish body,

(*b*) square body with a flat head,

(*c*) body with oval section and round head,

(*d*) body with rectangular section and squarish head.

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The measurements and the distribution of these types is tabulated below.

Types	Length	Period	Distribution
a	112 and 29 mm.	VI	9
		V	27
		IV	9
b	108—41 mm.	VI	1
		V	9
		IV	2
c	149—39 mm.	VI	2
		V	13
		IV	3
d	69—29 mm.	VI	5
		V	3
		IV	3

None of these is illustrated.

Peg (?)

A very heavily encrusted object with convex head and a squarish body was found in the layers of Period V. Being rusted, it is not possible to ascertain its exact use. It may, however, have been used as a dowel or a peg.

Fig. 190 No. 10 A heavily rusted peg, body squarish in section, head bulbous. No. 1826, NVS, D, 5. V.

Pounder

A single specimen of a double-ended pounder was found. It differs from its modern counterpart in two features. Firstly, such small-size pounders are made of brass now-a-days in the Deccan. Secondly, the modern pounder has only one striking face, the other end being bevelled both ways so as to present a sharp edge.

Those made of iron are more in length, uniform in thickness and have only one striking face. The present specimen is unique in the sense that it has two workable ends and a concavity in the middle which facilitates a better grip.

Taxila has given us a number of household objects of iron in the levels of the early centuries of the Christian era. However, pounders like the Nevasa specimen are totally absent there. As such, the Nevasa variety is definitely new.

Fig. 190 No. 8 A complete specimen, pounder with double-concave middle portion, workable at both ends. Diameter of the two ends 46 and 44 mm. No. 5905, NVS, F, 7. V.

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Seal

A heavily rusted piece of iron was found in the Indo-Roman (Period V) levels. It is not possible to ascertain its exact use, but its being square on plan with one side broadly biconvex suggests its possible use as a seal.

Fig. 190 No. 9 An intact square piece, one face broad and biconvex, length 30, thickness 4 mm. and breadth of face 14 mm. No. 4910, NVS, E, 5. V.

Lamp

A single specimen represented possibly a lamp. It consists roughly of a small shallow dish with traces of probably a rod-hold at one point along the periphery. The hold was useful either for lifting or for hanging.[24]

Similar lamps have been reported from Taxila where they belong to the early centuries of the Christian era, and thus become contemporary with that from Nevasa.

Fig. 190 No. 11 Fragment of probably a lamp, shallow, circular on plan, at one point traces of a vertical rod rectangular in section. Diameter of lamp-dish 127 mm. No. 3902, NVS, H, V. 4.

(*d*) Objects of ornamental use

The objects of this category comprise bangles and rings.

Bangles

Bangles are represented by fourteen pieces. These fall into two groups.

(*a*) those with a circular section, and

(*b*) those with a thin rectangular cross-section.

Type	Distribution	Thickness	Breadth	Diameter
a	IV,3; V,4; VI,1.	4-12 mm.	—	42-80 mm.
b	IV,1; V,5.	—	13-21 mm.	40-70 mm.

It is likely that some of the specimens of type '*a*' might have been put to some other use. The smaller ones were evidently used by children.

Two are illustrated.

24. Similar specimens from Kondivate caves are exhibited in the Deccan College Museum.

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Fig. 191 No. 1 Half of an iron bangle piece with circular section, heavily rusted. No. 6047, NVS, E, 9. IV. [Type a].

No. 2 Fragment of a bangle piece with a thin rectangular section, heavily encrusted. No. 3224, NVS, H, 3. V. [Type b].

Rings

Nine ornamental rings of iron were found. Rings of jasper, carnelian and shell have also been described elsewhere.

Their distribution shows that one comes from Period IV, six from Period V and two from Period VI.

None of these is illustrated.

(*e*) Miscellaneous Objects

Door-rings, handles and objects of unidentifiable use make this group.

Door-rings

Two specimens of door-rings were found. Similar ones are reported from contemporary levels at Taxila.

Fig. 191 No. 3 An intact ring fastened in a hook, the latter is usually inserted in the wooden door panel and twisted so as to make the ring firm. No. 741, NVS, E, 2. V.

No. 4 Similar to above but thicker. No. 4101, NVS, E, 4. V.

Handles

Four handle pieces were found. All these are heavily encrusted. They can be resolved into three groups.

(*a*) socketted handles—IV, 1; V, 1.

(*b*) tubular handle (covers)—VI, 1, and

(*c*) Conical handles—VI, 1.

None is illustrated.

Unidentified Object

Fig. 191 No. 5 A complete piece, square in section, the two ends turned out to opposite ends. Length 89, thickness 15 mm. No. 6199, NVS, G, 8. IV.

After having studied the details regarding the various types of iron objects, it would be better to bring together here a few important parallels regarding them.

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METAL OBJECTS

Apart from the period of the introduction of iron in the Deccan[25] which, as the evidence stands appears to be later than that in North India,[26] the Nevasa evidence shows that iron was used on a large scale only in the Indo-Roman period (V).

This goes very well with the evidence at Taxila, which is of signal importance to us. Apart from the contemporaneity, some of the household and carpentry objects are identical in shape as well. According to MARSHALL,[27] ladles with handles, frying-shovels and some other household objects betray Graeco-Roman influence ascribable to about the 1st century A.D. At Nevasa the indications of such an influence are further augmented by the find of such objects as votive tanks, Red polished ware, and amphorae associated with these.

For instance, handleless ladles,[28] frying or baking pans,[29] frying shovels,[30] adze[31] and chisels[32] have more or less exact counterparts from Taxila. The Nevasa and Taxila handled ladles tally in shape and period. As to the frying pans, the Nevasa specimens are devoid of any handles or lugs unlike the Taxila pans which have horizontal handles or lugs. The frying shovels are alike—both having a flat blade and a straight handle. The adze at Taxila has a greater antiquity as some specimens come from the Bhir mound. However, the later specimens coming from Jaulian and datable to about the 5th century A.D. come closer to the Nevasa specimens. The only difference is that the Jaulian adze has a socket hole which is missing in the Nevasa specimen. Otherwise the identity is close.

As to the chisel,[33] the antiquity at Nevasa goes to Period IV; no specimen is reported from the subsequent period. At Taxila also the earliest chisels come from Bhir mound. However, though the Nevasa chisel is

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25. Brahmagiri: c. 3rd cent. B.C.
26. Cf. Ujjain: 6th or 7th (?) cent. B.C. See *I.A.R.*, 1956-57, p. 24.
27. MARSHALL, *Taxila*, II, p. 533.
28. *Ibid.*, II, p. 542; III, pl. 162, Nos. 24, 25: 1st. Cent., Sirkap.
29. *Ibid.*, II, p. 541; III, pl. 162, Nos. 16-18.
30. *Ibid.*, II, p. 543; III, pl. 163, Nos. 39, 40; Sirkap.
31. *Ibid.*, II, p. 552; III, pl. 166, Nos. 112-117.
32. *Ibid.*, II, p. 553; III, pl. 166, No. 121.
33. *Ibid.*, II, p. 553.

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stratigraphically earlier it has a resemblance with the later Sirkap chisels from Taxila, especially type (*e*) with the difference that the latter has a splayed crescentic edge which is not the case with Nevasa chisel.

Thus the various iron objects at Nevasa are evidently the result of Roman influence. It was felt here because Nevasa lay on the route to Paithan and was thus an important site for the commercial hinterland to the western sea ports through which maritime contacts with the Roman world developed.

(D) LEAD OBJECTS

The objects of lead were few. These comprised folded sheets, wires, nails and fragmentary kohl-sticks.

The antiquity of lead at Nevasa goes back to 2nd-1st century B.C. as it came from the layers of Period IV.

Nail

Fig. 191 No. 6 A nail of lead, heavy body circular in section but tapering to a point now broken, flat round head. Length 37 mm. No. 646, NVS, E, 10. (IV).

Kohl-Stick

Fig. 191 No. 7 Fragment of a kohl-stick with one end broken, middle part thin, extant end bulbous. (Cf. Type A in copper). Length 65 mm. No. 1544, NVS, G, 3. V.

(E) OBJECTS OF SILVER

A single object of silver was found. It is heavily corroded and is peeling off.

The exact nature and use of this object cannot be ascertained. It is hour-glass-like in section and might have been used as a small stand probably to instal an object like a conch shell as is done today by the Hindus while worshipping.

Fig. 191 No. 8 Fragmentary stand (?), double-concave in outline, hollow at the neck, flared mouths at both ends. Height and diameter 41 mm. No. 4719, NVS, H, 4. V.

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XIII

OBJECTS OF GLASS

As compared to the number of other antiquities, objects of glass were much less. Among these also, bangles occupied the largest share. Besides bangles, rings, vessels and slag fragments were also found.

The stratigraphical yield of glass objects shows that though glass was known in Period IV, it developed as a cottage industry only in Period VI. This must have been due to the arrival of new cultural forces. Its association with the Bahamani period confirms the inference that the art of polychrome glass bangles was introduced by Iranian Muslims in the 14th-15th century.[1] This is further supported by excavations at Bahal and Sirpur and negatively by those from Ujjain, Nagda, Sravasti etc. where typical polychrome glass bangles are absent from layers datable to a period before 12th century A.D.

In spite of this, however, specimens of the best variety of glass come from the levels of Period V, as evidenced by an exquisite bubbleless blue glass and the fragments of very thin glass bangles of the same colour. This can be explained on the basis of various other antiquities indicative of Indo-Roman contacts so characteristic of Period V at Nevasa. The real indigenous workmanship, however, is at its best in Period VI.

Bangles

Glass bangles were of two categories: (1) monochrome and (2) polychrome. The first was six times greater than the latter; their respective numbers being 504 and 81.

Monochrome Bangles

The five hundred and odd monochrome glass bangle pieces could be grouped firstly by their colours and secondly by their sections.

The *colours* employed show a limited range, such as black, yellow, green, blue and red. The last mentioned does not seem to have found favour as only one specimen has been found. Black, however, seems to have been

1. Sankalia, H.D., "The Antiquity of Glass Bangles in India", *BDCRI.*, Vol. VIII, pp. 253-59

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a favourite colour as they account for more than half of the entire quantity of monochrome bangles. Save blue and green bangles which are translucent, all the rest are opaque.

The *method* of making these bangles seems to have involved the pulling out of plastic glass to requisite shape. Most of the bangles do not show smooth surfaces or clearcut outlines, In several cases, the edges show either a bubbly protrudence or unevenness of the breadth. On the other hand, there are several specimens especially in green and blue glass which show perfect curves as if pressed in a mould. It seems, therefore, likely that both these methods were in use.

Most of these monochrome pieces are devoid of any *decoration* inasmuch as they present a plain monotonous bulk. The only decoration that seems to have been current—from the evidence at hand—is of close-set shallow grooves on the outer surface. From the irregularity of these grooves it seems likely that these were executed by a sharp point when the bangle was still in a molten state (Fig. 192, No. 13). Some pieces show rope-like intertwining of two rods of glass.

The *sections* show a fair variety such as plano-convex, triangular, channel, square, circular and three-arched. Those of the first three types are abundant. Very few bangles have a rectangular section with both ends convex. A singular specimen represents a circular section and granulated body.

In most of the cases, the specimens were extremely *fragmentary*. It was, therefore. not possible to work out the possible diameters. From the extant pieces, however, it seems that bangles were produced both for adult and child use.

Several pieces of glass slag and devitrified glass from the levels of Period VI indicate that bangle-making was a flourishing *local industry*.

Bangles of black glass

Three hundred and seventynine bangle pieces were found. All these are plain and bear no decorations. Their distribution and sections are as follows.

Period	Layers	A	B	C	D	E	Total
		Plano-convex	Tri-angular	Square	Rectan-gular with convex ends	Tri-angular with rounded apex	
VI	1	68	19	1	3	49	140
VI	1a	35	12	—	2	28	77
V	2	59	25	—	4	62	150
V	3	6	1	—	1	3	11
V	4	1	—	—	—	—	1
		169	57	1	10	142	379

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The distribution shows that black glass bangles were most abundant in the late phase of Period V and the layers of Period VI. The bangles with plano-convex triangular sections were the most abundant.

The measurements of these types are given where it was possible to do so.

(A)	Thickness:	14 and 4	mm.	Diameters:	40 and 80	mm.
(B)	„	3 and 4.5	„	„	70 and 60	„
(C)	„	3	„	„	—	
(D)	„	3	„	„	—	
(E)	„	4 and 5	„	„	60	mm.

Though in most of the types the thickness does not vary much, in the case of type (A) it shows wide variations. Moreover, in this category small-size bangles are the most frequent showing that these were used for small girls.

The treatment of the surface of these bangles is not at all smooth and in several cases the joint of the bangle at the ends is bulbous. Moreover, quite a fair number of these are not perfectly circular.

Bangles of Green glass

Fifty fragmentary green glass bangles were found. These show a variety of shades in basic green, such as sap green, hookers green, emerald green, permanent and turquoise green.

Technically one or two points are worth notice in this group. First is that the bangles with a channel or half decagonal section seem to have been moulded perfectly when the glass was in a plastic state. Secondly, several bangles have inferior quality of glass inasmuch as several pieces show a coating of white encrustation. Thirdly, some translucent pieces have horizontally elongated bubbles in the body of the glass indicating that the glass was drawn out when in plastic state.

Decorative effects consisted of intertwining two rods of green glass so as to yield a twisted rope pattern to the bangle. Some are spirally wound while in the case of one, small lumps of a deeper shade of the same colour are affixed to and fused with the body of the bangle.

The green bangles can be grouped into the following categories on the basis of their sections.

Triangular section	V, 1; VI, 3 = 4
	Diameters: 50 and 60 mm.
	Thickness: 4 and 7 mm.
	Translucent.
Rectangular with convex ends	V, 1; = 1.
	Opaque.

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Plano-convex	V, 3; VI, 15 = 18.
	Diameter : 50 mm.
	Thickness: 8 mm.
	Translucent.
	Not perfectly circular.
Circular	V, 5; VI, 7.
	Diameter: 50 mm.
	Thickness: 9 and 4 mm.
	Opaque.
	Yellow specks.
Channel section	IV, 5; V, 5; VI, 5.
	Diameter: 40 and 70 mm.
	Height of sides: 19 mm.

This type of bangles not only takes back the antiquity of glass to Period IV at Nevasa, but shows that the technique of fashioning glass bangles in moulds was skilfully executed at such an early period.

The following are illustrated.

Fig. 192 No. 1 Fragment, channel section, surfaces covered with a white encrustation, core green. No. 2714, NVS, 1a. VI.

No. 2 Similar to above but with sides less high and undersurfaces pentagonal. No. 2558, NVS, D, 1a. VI.

No. 3 Fragment, triangular section with rounded apex, small dots of green glass affixed at apex. No. 673, NVS, D, 1a. VI.

No. 4 Fragment, emerald green opaque glass, wavy circular on plan, channel section. No. 2443, NVS, F, 3. V.

No. 5 Complete specimen of an irregularly circular bangle, twisted so as to yield a rope pattern, pale green colour, translucent. No. 2229, NVS, G, 3. V.

No. 6 Small fragment, opaque, round section, spirally wound, light ashy green. No. 554, NVS, F, 1a. VI.

Bangles of Yellow glass

Three pieces of yellow glass bangles were found. All these are devitrified and plano-convex in section. The shades represented are gamboz yellow, lemon yellow, yellow ochre and chrome orange.

Of the three, two belong to Period VI, and one to Period V. None is illustrated.

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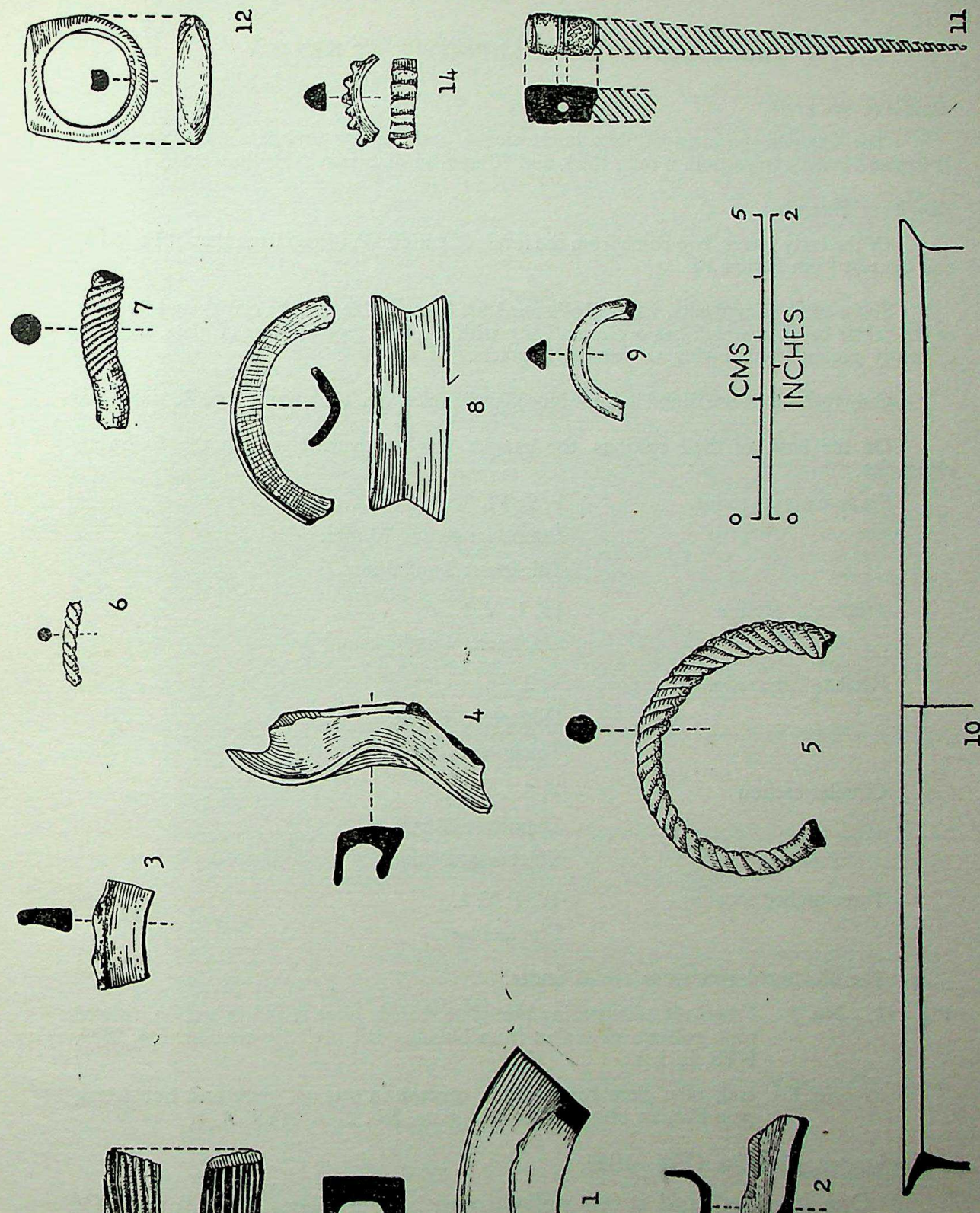

Fig. 192 : Glass Objects [1/1]. Bangles (1-8, 13), Vessel (10), Kohl-stick (11). Rings (9, 12, 14). (See pp. 442, 444, 446, 552-53).

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Bangle of Red glass

The singular specimen exhibits burnt sienna and chrome orange shades combined. It is plano-convex in section, 6 mm. thick and 70 mm. in diameter. Not illustrated.

Bangles of Blue glass

Of the forty pieces, two come from the levels of Period IV, fifteen from that of Period V and the rest from Period VI.

Some of the fragments, as at Kolhapur,[1] are remarkable for the clarity and fineness of the fabric of glass which has a close affinity with the best type of Roman glass, and are evidently present here owing to foreign contacts.

Only two shades are found in these blue glass bangles, viz., ultramarine and Persian blue.

On the basis of their sections, the bangles resolve themselves into the following categories.

Plano-convex section	V, 9; VI, 22; Diameter: 40 and 70 mm. Thickness: 5 and 9 mm.
Triangular section	IV, 1; V, 1. Thickness: 4 and 5 mm.
Rectangular section	V, 2. Diameter: 70 mm. Thickness: 7 mm.
Circular section	V, 3. Diameter: 60 mm. Thickness: 8 mm.
Three-arched section	IV, 1; V, 1. Fragmentary.

The illustrated specimens are as under.

Fig. 192 No. 7 Fragment, ultramarine blue glass, bangle piece round in section, twisted rope pattern, glass free from bubbles, not perfectly circular. No. 2559, NVS, E, 3. V.

No. 8 Half of a glass bangle, thin, concave in section, pure and bubbleless, pale Persian blue Roman-like glass. No. 2106, NVS, B, 4.

Polychrome Bangles (Fig. 193)

One hundred and seven polychrome bangle pieces were found. Of these, nearly eighty came from the layers of Period VI, and the rest from

1. SANKALIA and DIKSHIT, *op. cit.*, p. 117.

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those of the earlier period. This does not, however, mean that polychrome glass bangles were known in the Indo-Roman period, but their occurrence can be explained when it is noted that at the junction of the Indo-Roman and Muslim horizons, huge pits were found. In the light of this evidence and the general evidence so far obtained from other sites, it is safe to ascribe these polychrome glass bangles to Period VI alone.

Save a few, more than half of the bulk shows a basal yellow glass band, and hence presents a somewhat drab monotony of colour. However, the only relieving feature in these is that they exhibit different shades in yellow.

That most of these were for adults is evident from their diameters and breadth, the latter making them somewhat heavy to wear.

Some bangles show a skilful combination of wires of different coloured glass arranged one above the other and then fused together so that the bangle is more in thickness than in breadth. In yet some other cases different coloured glass is fixed and fused in the body of a broad bangle piece so as to present an ornamental design. The colours chosen are such that they present a contrast and yet are not glaring so as to displease the eye. It is a clear indication of the fact that the artists of these days had a good knowledge of the art of glass making and had a control over fusion temperatures.

The design of decoration shows a wide variety of ornamentation. Dots, wavy bands, dot-rosette, pear-shaped motif, slanting lines, arcs, chevrons and twisted bands are some of the notable designs arranged in pleasing colours on a contrastive background.

On the basis of the main basal band of glass, the polychrome glass bangles may be divided into the following categories.

(A) Yellow Glass

81 pieces; V-22; VI-59; sections mostly triangular with rounded apex, and plano-convex; thickness 4 and 6 mm; diameter 65 mm. shades of colour: lemon, gamboz yellow, chrome orange, chrome yellow and golden yellow.

(B) Red Glass

6 pieces; V-2; VI-4; sections circular and plano-convex; thickness 4 and diameter 40 mm., mostly for children; colour scarlet red, burnt sienna, vermilion red and raw sienna; top colour always deep.

(C) Black Glass

5 pieces; VI-5; Plano-convex, fragment; white waves over black body; some pieces very broad (22 mm.)

(D) Green Glass

3 pieces; V-2; VI-1; plano-convex and round; fragments; permanent green, sap green and emerald green.

(E) Blue Glass

2 pieces; V-2; plano-convex; royal and ultramarine blue; in some, bands not fused properly.

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The illustrated specimens are as follows:

Fig. 193 No. 1 Fragment, plano-convex section, black glass base, wavy bands of white glass on the outer surface. No. 23, NVS, F, 1. VI.

No. 2 Fragment, plano-convex section with concave base, elongated horizontal empty pear-design compartmented by vertical lines on either side in lemon yellow on jet black surface. Breadth 22 mm, thickness 10 mm. No. 722, NVS, C, 2, V.

No. 3 Fragment, as above, but with Persian blue translucent base bearing slanting lemon yellow bands covered by hatched bands in green. Breadth 18 mm, thickness 8 mm. No. 603, NVS, A, 1a. VI.

No. 4 Fragment, like No. 1 above, but horizontal plan of design. Breadth 17 mm. thickness 11 mm. No. 4978, NVS, Y, 1. VI.

No. 5 Fragment, bangle not circular in outline, plano-convex section, translucent hookers green base bearing random design in lemon yellow. Breadth 12 mm. thickness 7 mm. No. 859, NVS. F, 2. V.

No. 6 Fragment, somewhat similar to No. 3 above, but hookers green base, design in lemon yellow, plano-convex section. Breadth 13 mm. thickness 9 mm. No. 762, NVS, F, 2. V.

No. 7 Fragment, channel section, sap green base, lemon-yellow coating, one edge having varmilion red band capped by white dots, diameter suitable for a child's hand, white dots affixed later. Breadth 23 mm., thickness 4 mm. No. 704, NVS, A, 1. VI.

No. 8 Fragment, piece consisting of three circular rods of glass fused one above the other, lowermost of chrome orange and burnt sienna colour, middle one consisting of twisted bands of lemon yellow and burnt sienna, topmost of Persian blue capped by dots in ultramarine blue. No. 344, NVS, I, 1. VI.

No. 9 Fragment, plano-convex section, base of scarlet red and burnt sienna, alternate pairs of dots in lemon yellow and sap green. No. 134, NVS, C, 1. VI.

No. 10 Fragment, plano-convex, jet black body decorated by grey elongated dots. No. 203, NVS, D, 1. VI.

No. 11 Fragment, plano-convex, burnt sienna and lemon yellow at base, dots in permanent green and arcs in lemon yellow. Thickness 4 mm. No. 901, NVS, I, 2. V.

No. 12 Fragment, plano-convex, sap green body, empty horizontal diamond in lemon yellow, filled in by dots of light vermilion red colour, thickness 4 mm. No. 1313, NVS, F, 2. V.

No. 13 Fragment, triangular section with rounded apex, gamboz yellow base capped by a band of golden yellow covered by alternate pairs of dots in permanent green and burnt sienna. No. 817, NVS, A, 1a. VI.

No. 14 Fragment, elongated triangular section, body ultramarine blue, decoration consisting of dots of same colour enclosing a close-set group of five dots in dull white. No. 84, NVS, F, 1. VI.

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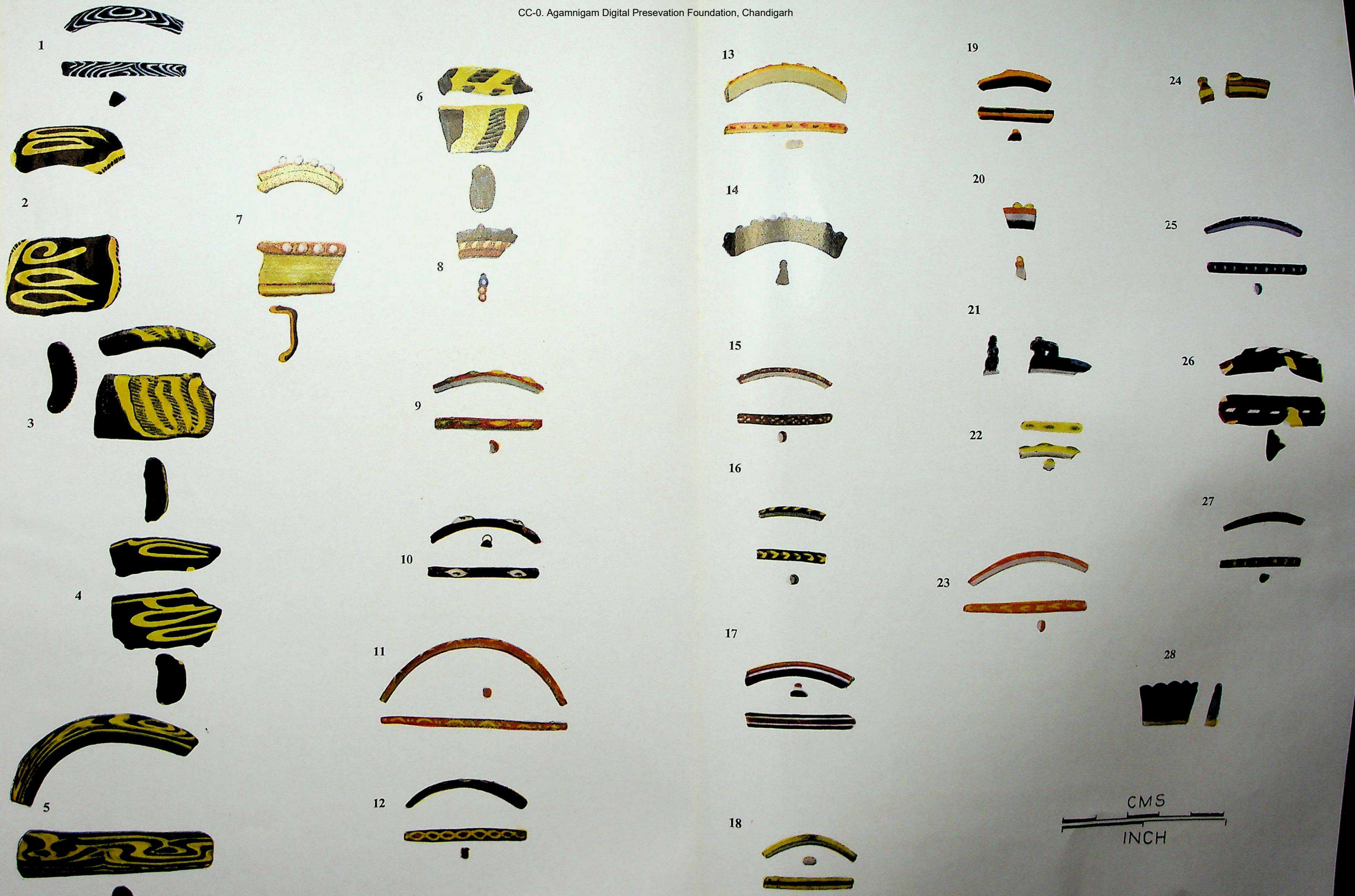

Fig. 193 : Polychrome Glass bangles [1/1]. (*See pp. 448-51*).

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OBJECTS OF GLASS

No. 15 Fragment, plano-convex, basal band of greyish white capped by amethyst coloured glass bearing groups of four dots in lemon yellow. No. 207, NVS, D, 1. VI.

No. 16 Fragment, plano-convex, basal band in hookers green, design of chevrons to left in lemon yellow. No. 288, NVS, D, 1. VI.

No. 17 Fragment, triangular section, basal band of ultramarine blue, capped by another band in dull white covered by a thin band in Indian red. No. 1665, NVS, I, 2. V.

No. 18 Fragment, rectangular section, turquoise green with marginal bands in lemon yellow. No. 407, NVS, D, 1. VI.

No. 19 Fragment, triangular section, jet black bearing a band of gamboz yellow on the exterior. No. 160, NVS, F, 1a. VI.

No. 20 Small fragment, rectangular section, greyish green base, capped by band of Indian red glass bearing dots in lemon yellow. No. 328, NVS, C, 1. VI.

No. 21 Fragment, triangular section, sky-blue in colour, marginal bands in light cream yellow at base, at top two rows of dots connected by a band in between. No. 365, NVS, I, 1. VI.

No. 22 Fragment, plano-convex, basal band light greyish white, capped by lemon yellow, bearing dots in turquoise green. No. 570, NVS, H, 1a. VI.

No. 23 Fragment, round in section, greyish white at base, vermilion red and chrome orange band having chevrons to right in lemon yellow. No. 287, NVS, I, 1. VI.

No. 24 Small fragment, triangular section, translucent lemon yellow at base, then opaque lemon yellow, capped by a band of burnt sienna, then lemon yellow, then permanent green bearing dots in burnt sienna and chrome orange, specimen notable for the variety of colours and perfect fusion of glass bands. No. 256, NVS, 9, I. VI.

No. 25 Fragment, plano-convex, ultramarine blue bearing short vertical lines in white. No. 829, NVS, I, 1. VI.

No. 26 Fragment, triangular section jet black at base, capped by Indian red band, crowned by twisted bands of jet black and dull white glass. No. 1912, NVS, A, 1. VI.

No. 27 Fragment, plano-convex, base hookers green covered by a band of sap green, short vertical lines in lemon yellow. No. 252, NVS, I, 1. VI.

No. 28 Small fragment, triangular section with rounded apex, lemon yellow basal band covered by ultramarine blue, dots of same colour on top. Breadth 16 mm. No. 252a, NVS, F, 2. V.

RINGS

Twenty-six specimens of glass rings were found. Of these, save three, all the rest are monochrome. Whereas the antiquity of monochrome glass rings can be traced to Period IV, all the polychrome pieces come from Period VI.

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Monochrome glass rings

These twenty-three pieces can be grouped basically in four colours, black, green, red and blue. Most of these are opaque.

Some of these show that the ends were not properly fused, and hence they have remained bulbous at the joint. In the case of a few black rings, the spirals of glass can be seen showing they were made by the wire-wound process. One of the red glass bangles made of cuprous glass[3] shows a joint midway on the breadth of the interior indicating that it was made in a double mould. This is really remarkable as this technique is totally absent in the case of contemporary glass bangles (Fig. 192, No. 13).

Most of these rings seem to have been for adult use as their diameters vary between 19 mm. and 24 mm. The breadth or thickness of the sides is 4 mm. to 5 mm. and remarkably uniform.

Save a couple of specimen, all the rest are severely plain rings. The variations exhibit either a truncated pyramidal or a flat biconvex bezel. The only other attempt at decoration consists of short vertical etchings on the body. This is evidently done when the glass was in a plastic state.

(A) Black glass rings (5)
Plano-convex section—IV, 1; V, 3; VI, 1.
Diameter 20 mm. Thickness 4 mm. to 7 mm.

Fig. 192, No. 14 Fragment of a black glass ring with serrated edge formed by affixing tiny lumps of black glass. No. 1678, NVS, G, 2. V.

(B) Green glass rings (10)
Plano-convex—IV, 1; V, 3; VI, 2.
Circular—IV, 1; V, 2.
Triangular—VI, 1.
Shades—emerald green, sap green, Persian green.
Diameters 10 mm. to 29 mm.
Thickness 4 mm. to 5 mm.

(C) Red glass rings (5)
Rectangular section—V, 1.
Plano-convex—VI, 1; V, 1.
Bright vermilion and Indian red.
Diameter 24 mm.
Thickness 4 mm. to 5 mm.

(D) Blue glass rings (3)
All with plano-convex section. IV, 1; V, 1; VI, 1.
Diameter 20 mm. Thickness 4 mm.
Ultramarine, royal and turquoise blue.

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3. Pulley-shaped glass discs of this glass were found at Nasik and Maheswar.

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Polychrome glass rings

The three pieces of this variety do not show any elaborate decorative arrangement of glass bands as in the case of polychrome glass bangles.

The principal colours used are Persian green, burnt sienna, sap green, light grey and ultramarine blue.

Plano-convex, triangular and round—these three are the varieties of the sections.

Fig. 192 No. 9 Ring, plano-convex section, Persian green, base capped by burnt sienna. Diameter 22 mm. and thickness 5 mm. No. 558, NVS, F, 1a. VI.

Small Glass Vessels

Rim fragments of twelve opaque glass vessels indicate that besides beads, bangles and rings, glass vessels also were in use at Nevasa. Though introduced first in Period IV, they concentrate in the levels of Period V when extensive Roman contacts developed with peninsular India.

Since most of these are extremely fragmentary and fragile, it is not possible, in their present state, to indicate whether these were moulded or otherwise. However, they are uniformly thin-sided.

Principal colour used is emerald green, Persian blue accounting for only one specimen. The earliest vessel of Period IV is made of a combination of emerald green and lemon yellow glass.

Fig. 192 No. 10 Fragment of a glass vessel with thin sides, out-turned rim, emerald green and lemon yellow glass fused together. No. 5516, NVS, E, 9. IV.

Kohl Stick

A fragmentary piece of a rod with hatched incised design is probably a fragment of a kohl-stick.

Fig. 192 No. 11 Fragment of a flat-topped, cylindrical royal blue glass object, possibly a kohl-stick, hatched incised design near the top. Diameter 14 mm. No. 1284, NVS, C, 3. V.

Glass Slag

Fourteen glass slag lumps were found. Eight of these come from the topmost layer, five from the layers of Period V and one from Period IV.

This again proves that glass was locally made. Moreover, the comparatively less amount of waste slag shows that the glass-workers avoided as much waste as possible, and had a mastery over the process of good glass making.

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XIV

OBJECTS OF BONE, SHELL AND IVORY

The objects made of bone, shell and ivory comprised a variety such as bone points, bangles, rings, seals, handle pieces, bangle-rods and spindle whorls.

(A) BONE OBJECTS

Bone was the material for points, whorls, kohl-sticks, rings and handles.

Bone points

Nineteen complete and three fragmentary bone points were found. Similar bone points have been reported from a number of sites in India. They occur over a wide periodic range, and their use is uncertain. The largest collection comes from Nasik.[1]

The specimens under study can be grouped into five categories as follows:

(*a*) Biconical in outline, with the body flaked off to sharp ends. IV-1; V-6; VI-1; = 8. Max. length 118 mm., Max. thickness 11 mm.

(*b*) Cylindrical body and abruptly pointed ends. IV-2; V-5; = 7. Max. length 80 mm., Max. thickness 9 mm.

(*c*) with fine grooved point, the rest as '*a*' or '*b*'. V-2; = 2. Max. length 73 mm., Max. thickness 10 mm.

(*d*) tanged. V-1; = 1. Length 71 mm., thickness 11 mm.

(*e*) with cylindrical heads. IV-1; = 1. Length 65 mm., thickness 8 mm.

The three fragmentary specimens come from the layers of Period V.

The specimens under study are too meagre in quantity for any generalisation. However, whatever are available, do not show any stages of manufacture. Some of the points have very smooth and polished surfaces due possibly to use.

The illustrated bone points are described below.

Fig. 194 No. 1 A complete specimen, biconical in outline, flaked off to points at both ends. No. 8726, NVS, F, 7. V. (Type *a*).

No. 2 Complete bone point with cylindrical body, ends abruptly flaked off to points, polished surfaces. No. 2303, NVS, D, 5. V. (Type *b*).

No. 3 Complete specimen as type '*b*' above but with grooved points. No. 4196, NVS, F, 3. V. (Type *c*).

1. Sankalia and Deo, *op. cit.*, pp. 221-23.

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Fig. No. 4 Fragment, tanged point with the tang partially broken, one end flaked off to a point. No. 2189, NVS, D, 6. V. (Type *d*).

No. 5 Complete specimen, with a short cylindrical head, body flaked off to a point at the end. No. 1352, NVS, X, 3. IV. (Type *e*).

Pendent

Fig. 194 No. 6 A piece of horn, triangular in outline, with a perforation at the apex, another partial perforation at the base, pendent (?). No. 946, NVS, X, 3. IV.

Rings

All the three specimens came from Period V and had plano-convex section. Their maximum diameter was 27 mm. and maximum thickness 4 mm.

Fig. 194 No. 7 Half of a bone ring, plano-convex in section. No. 1096, NVS, E, 2. V.

Spindle Whorl

Only three specimens were found. All of them belong to Period VI. Two of these are perforated and one is without perforation. The diameters of these vary between 30 mm. and 32 mm. and thickness between 4 mm. to 9 mm. None is illustrated.

Kohl-sitcks

Seventeen complete and five fragmentary antimony rods were picked up.[2] They fall into the following groups.

(*a*) with pointed and short knob at one end,
(*b*) with one end bulbous and the other tapering and pointed,
(*c*) with an elongated bulbous knob tapering abruptly to a point,
(*d*) tapering body and flared and grooved or ungrooved head,
(*e*) with highly decorated heads, and
(*f*) with a plain body and a thick head.

Their periodwise distribution is tabulated below:

Type	IV	V	VI	Total
a	1	3	—	4
b	1	—	—	1
c	2	—	—	2
d	1	5	2	8
e	—	1	—	1
f	—	1	—	1
Total	5	10	2	17
Fragments	—	5	—	—
Total	5	15	2	22

2. For typology and distribution elsewhere, see SANKALIA and DEO, *op. cit.*, p. 119.

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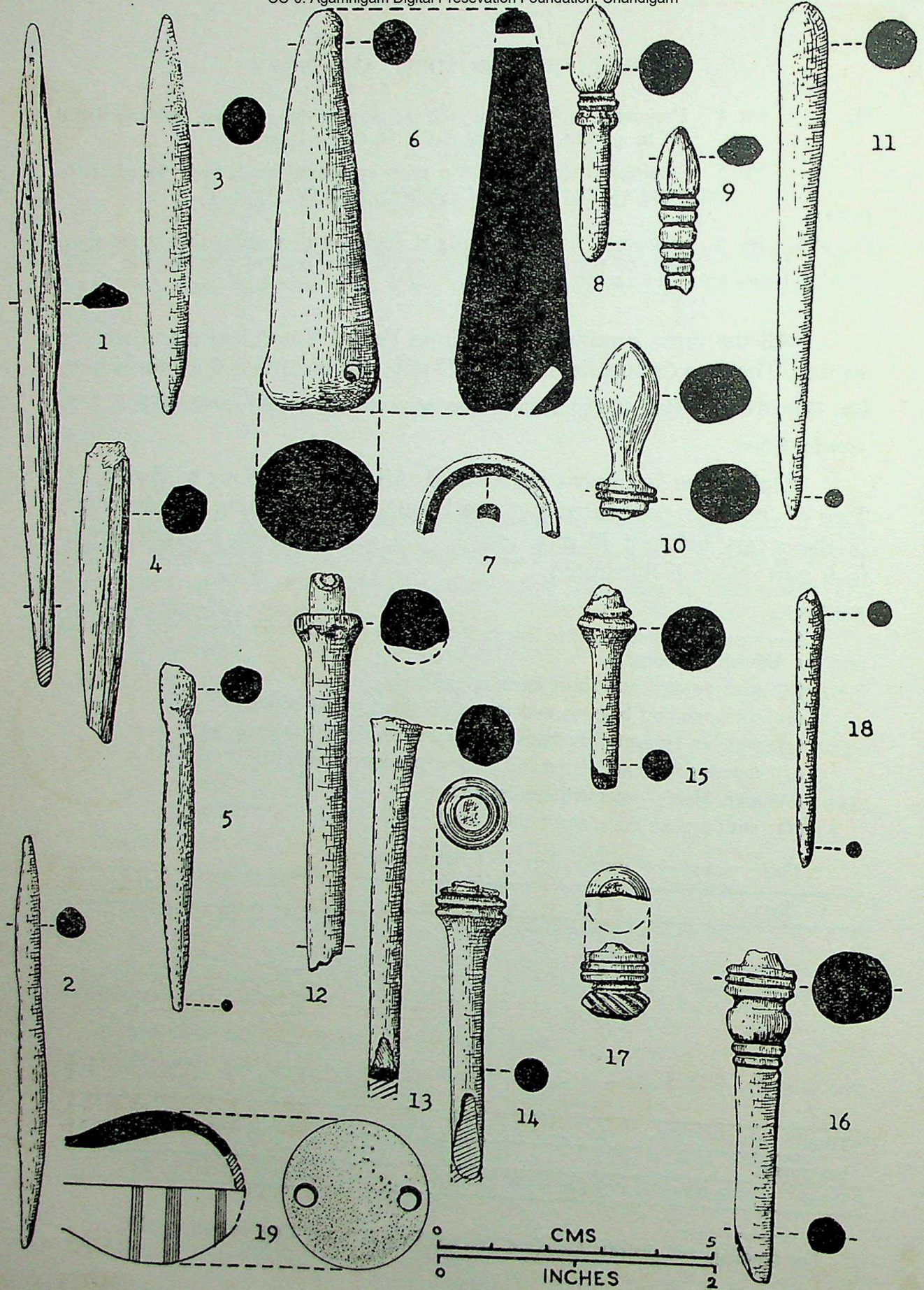

Fig. 194 : Objects of Bone [1/1]. Bone points (1-5), Pendent (6), Ring (7), Kohl-sticks (8-18), Handle (19) (See pp. 454-455, 458).

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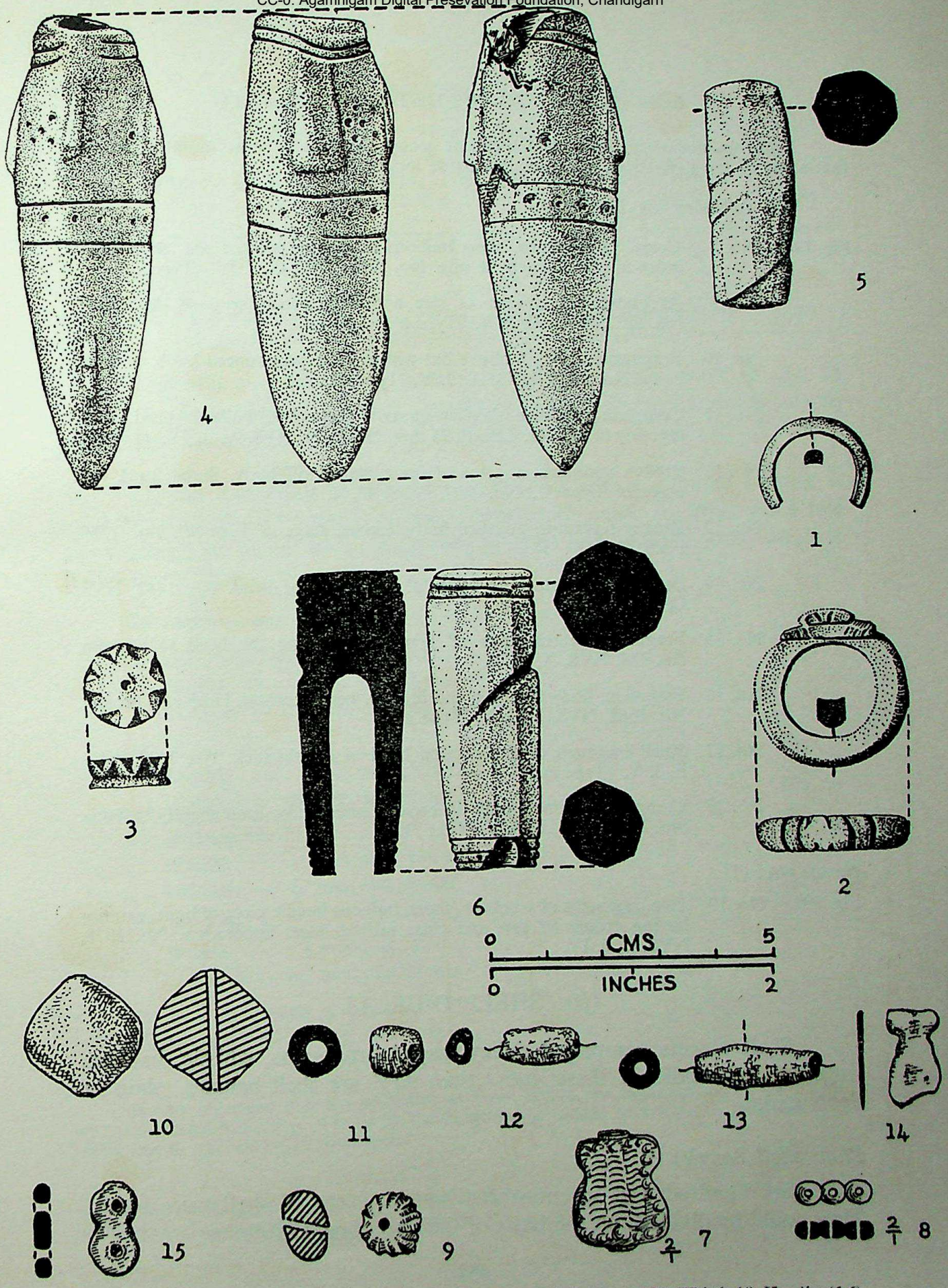

Fig. 195 : Shell, Copper and Gold Objects [1/1]. Shell: Rings (1-2), Earstud (3), Whistle (4), Handles (5-6). Gold beads (7-9), Copper beads (10-15). (See pp. 414-415, 423, 463-465).

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Some unfinished specimens which can be grouped in type '*d*' were found. It may be that some of the kohl-sticks were possibly made locally.

The following are illustrated:

Fig. 194 No. 8 Complete specimen, short bulbous head with pointed end, short body, grooved neck. Length 46 mm. No. 5715, NVS, G, 7. IV. (Type *a*).

No. 9 As above but smaller in size and with broad grooved decoration. No. 1282, NVS, G, 2. V. (Type *a*).

No. 10 Fragment, as No. 8 above but with a more pronounced knob, polished body. No. 1404, NVS, A, 3. V. (Type *a*).

No. 11 Complete specimen, broken in two fragments, bulbous head, body tapering to a point. Length 94 mm. No. 1424, NVS, X, 3. IV. (Type *c*).

No. 12 Broken specimen, a piece of bone, flaked off body, flared head, first stage of Type '*d*.' No. 4807, NVS, H, 4. V.

No. 13 Broken fragment, polished body, second stage of Type '*d*'. No. 1560, NVS, D, 3. V.

No. 14 Broken, third stage of Type '*d*', grooving the head. No. 1442, NVS. C, 3. V.

No. 15 Fragment, fourth stage of Type '*d*', tapering the head to a point. No. 484, NVS, X, 1. VI.

No. 16 Fragment, body tapering, end broken, head grooved, knob also broken. No. 1569, NVS, D, 3. V. (Type *d*).

No. 17 Small fragment of a decorated head of a kohl-stick. No. 2340, NVS, F, 3. V. (Type *e*).

No. 18 Complete specimen, only tip broken, plain body, head slightly bulbous. No. 2404, NVS, E, 3. V. (Type *f*).

Handle piece (?)

Fig. 194 No. 19 Two fragments of a hollow, short, bulbous handle piece of bone, exterior having groups of fine and close incised linear decoration. No. 1978, NVS, C, 6. IV.

(B) SHELL OBJECTS

Shell objects comprised pulley-shaped ornaments, whistle, bangles, rings and ear-studs. Of these, more than 95% are shell bangles, plain or decorated.

Plain shell bangles

Six hundred and seventy-three bangle pieces of shell were found. They could be divided, on the basis of their sections, as follows.

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Periods	SECTIONS					
	Rectangular	Plano-Convex	Biconvex	Rectangular with Convex ends	Channel Section	Totals
VI	46	7	8	30	3	94
V	127	4	33	296	58	518
IV	3	6	4	45	2	60
III	—	—	1	—	—	1
Totals	176	17	46	371	63	673

The above table shows that shell bangles were most in use in Period V. That they were made locally is evidenced by hundreds of cut shell pieces encountered in the levels of this period.

Of the five types tabulated above, that with a channel section is most remarkable. The channel was deliberately made to inlay gold leaf as evidenced by pieces with fragments of gold leaf sticking to it found in the layers of Period V.

The measurements of the above types are given below.

(*a*) Those with channel cross-section
Breadth — 17 mm. and 8 mm.
Diameter — 100 mm. and 26 mm.

(*b*) Plano-convex
Breadth — 8 mm. and 5 mm.
Diameter — 62 mm. and 40 mm.

(*c*) Rectangular
Breadth — 10 mm. and 4 mm.
Diameter — 62 mm. and 30 mm.

(*d*) Biconvex
Breadth — 8 mm. and 4 mm.
Diameter — 142 mm. and 42 mm.

(*e*) Rectangular with convex ends
Breadth — 9 mm. and 4 mm.
Diameter — 102 mm. and 42 mm.

It may be noted that the diameters as given above are approximate as the bangles are rarely perfectly circular. It is due to the technique of cutting a shell which yields cut rings according to the shape of the shell.[3]

3. At present in Bengal big shells are cut with the help of a big curved blade in the process of bangle making. Information kindly supplied by Dr. K. D. Banerjee.

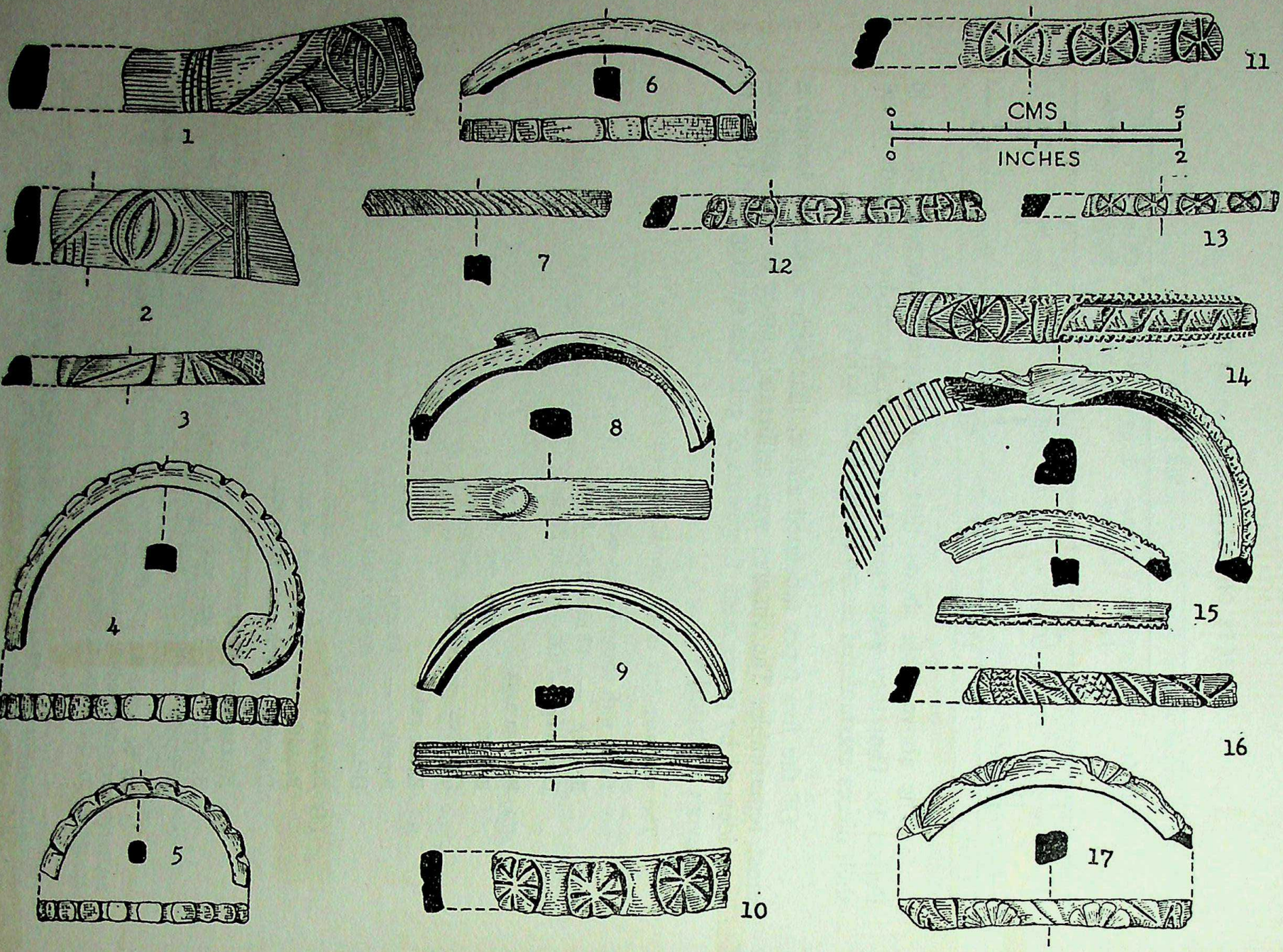

Fig. 196 : Shell Bangles [1/1]. (See pp. 462-463).

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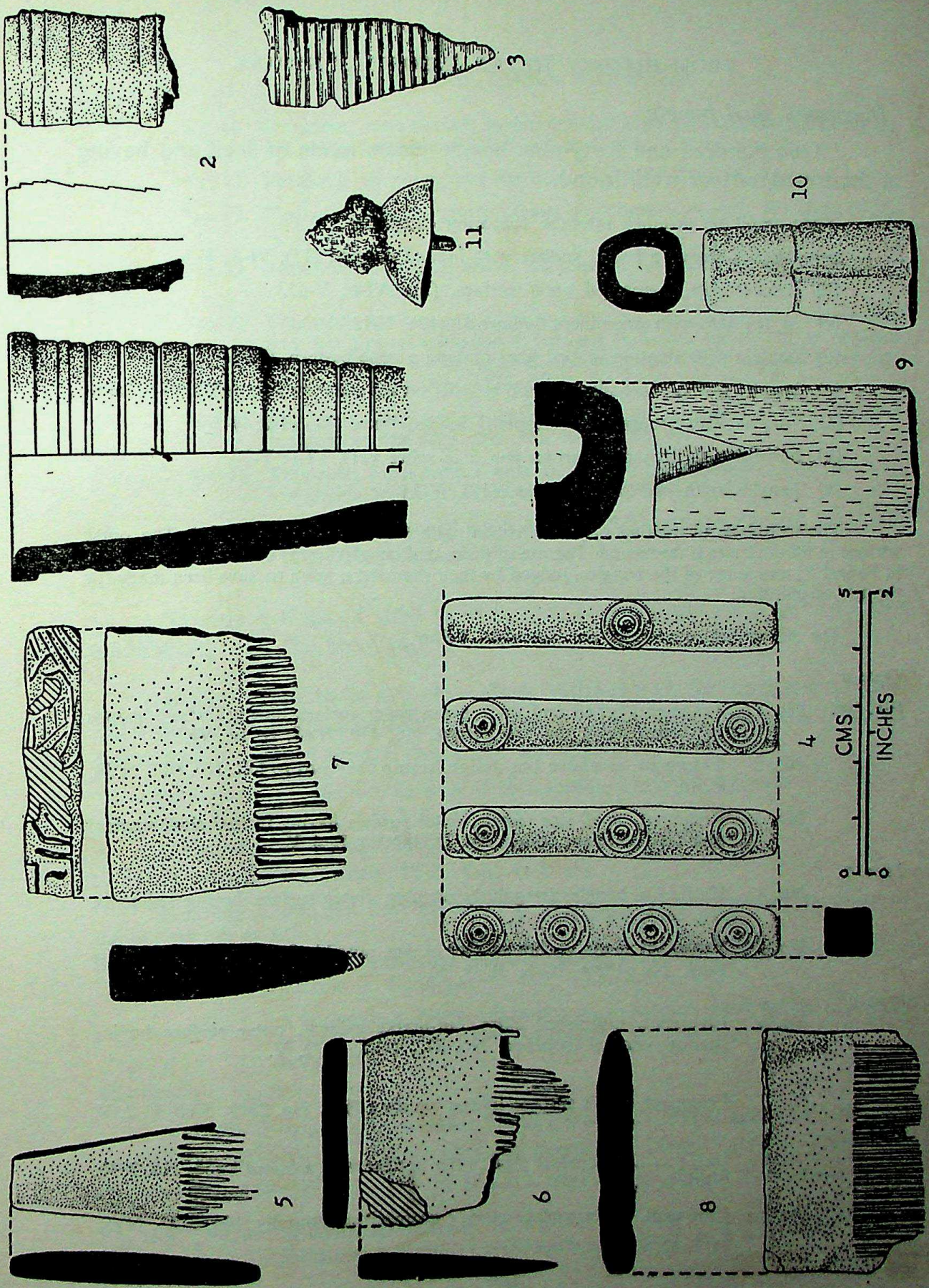

Fig. 197 : Ivory Objects [1/1]. Bangles Rods (1-3), Dice (4), Combs (5-8), Handles (9-10). Stopper (11) (See pp. 466-469).

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Decorated shell bangles

One hundred and forty-nine bangle pieces made of shell and having a decorated surface were found.

They could be grouped into the following categories.

(*a*) bangles having a broad surface with incised designs. (15). VI-8; V-7.

(*b*) bangles with segmented outer surface. (51). VI-6; V-45.

(*c*) as (*b*) but with prominent segments. (13). V-13.

(*d*) bangles with slanting incised lines making a rope pattern. (9). VI-3; V-6.

(*e*) bangles with a heart-shaped knob in relief on the outer surface. (26). VI-5; V-21.

(*f*) bangles with groups of horizontally incised lines. (7). VI-2; V-5.

(*g*) bangles with incised design on panels in relief. (21). VI-1; V-20.

(*h*) bangles with elaborate designs. (17). V-7.

The technique of making these is identical with that of the plain bangles. The outer surface in all the cases is decorated. The use of decorated bangles seems to have been extensive in Period V, and some of the bangles, judged by their diameters, seem to have been made for the use of children.

The illustrated specimens are described below.

Type a

Fig. 196 No. 1 Fragment, broad and thick piece, outer surface having incised groups of vertical lines and leaf design. No. 470, NVS, B, 1a. VI.

No. 2 Fragment, as above but design having chevrons to left. No. 617, NVS, C, 1a. VI.

No. 3 Fragment, small-size bangle, outer surface having incised slant vertical and hatched linear design. No. 1833, NVS, B, 4. V.

Type b

No. 4 Half of a bangle, irregularly circular, outer surface having segments. No. 2323, NVS, H, 3. V.

No. 5 Fragment as above, but smaller in size, possibly for a child, pure white shell. No. 1880, NVS, B, 3. V.

Type c

No. 6 Fragment, unfinished sides, cut-marks evident, outer surface having shallow vertical incisions. No. 872, NVS, C, 2. V.

Type d

No. 7 Fragment, outer surface having slanting lines. No. 2249, NVS, E, 2. V.

Type e

No. 8 Half piece, pure white shell, outer surface with a raised knob. No. 2030, NVS, E, 4. V.

No. 9 Fragment, outer surface closely grooved horizontally. No. 3123, NVS, F, 4. V.

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Type g

No. 10 Fragment, outer surface having circular panel in relief, incised to make a floral pattern. No. 3327, NVS, E, 4. V.

No. 11 Fragment, as above, but less neat. No. 2554, NVS, E, 2. V.

No. 12 Fragment, circular panel having 'plus' marks incised. No. 818, NVS, A, 2. V.

No. 13 Fragment, as No. 11 above, but thinner. No. 2059, NVS, E, 3. V.

Type h

No. 14 Fragment, not circular on plan, outer surface having serrated margins and two grooves enclosing in between diamonds slantly cut, at one end a circular knob incised to make a floral pattern and enclosed by groups of vertical lines. No. 1537, NVS, G, 3. V.

No. 15 Fragment, outer surface having a groove and marginal short vertical incisions at one edge only. No. 5044, NVS, G, 6. V.

No. 16 Fragment, outer surface bearing hatched parallelograms alternated by leaf design on panels in relief. No. 2010, NVS, B, 4. V.

No. 17 Fragment, thinner specimen, design of petals and leaves incised. No. 1765, NVS, B, 4. V.

Rings

Seventeen rings of shell were found. These might have been locally made along with the bangles.

Save one, all these are plain rings without any decoration or bezel. Their diameters range between 22 mm. and 25 mm. and thickness between 3 mm. and 6 mm. In several cases, the thickness is not regular.

They can be grouped, on the basis of their section, in three categories.

(*a*) square section: IV-1; V-3; VI-1. (5).

(*b*) rectangular section: IV-3. (3).

(*c*) plano-convex section: IV-1; V-5; VI-3. (9).

Shell rings seem to have been introduced in Period IV, and were current in the succeeding two periods as well.

Fig. 195 No. 1 Half of a shell ring, plano-convex in section, cut out of a shell piece, uniform in thickness. No. 609, NVS, X, 1a. VI.

No. 2 A complete specimen, plano-convex in section, head having a cut and stepped decoration. Diameter 29 mm. and thickness 7 mm. No. 1147, NVS, A, 2. V.

Ear studs

All the four specimens came from Period V. These are small circular pieces of shell with one of the surfaces bearing a floral pattern. They vary in diameter between 12 mm. and 16 mm. and are 6 mm. in thickness.

Fig. 195 No. 3 A complete specimen, pure white shell, flat base, eight-petalled floral design, a neat central perforation. No. 6082, NVS, H, 7. V.

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Pulley-shaped ear ornament

One specimen of an ear-ornament pulley-shaped in outline was found. Similarly shaped objects in glass and shell have been reported from Maheswar, Nasik, Somnath, Ujjain and several other sites in India. At Somnath,[4] some specimens had a coating of gold leaf. In South India similar things are worn in the earlobes.[5] They occur from the early historic periods to about the end of the Gupta period.

The Nevasa specimen is made of shell but seems to have suffered due to burning. The groove is shallow. The thickness is 19 mm. and diameter 45 mm. No. 3017, NVS, E, 4. V. Not illustrated.

Whistle (?)

A complete specimen of possibly a whistle was found. The perforation is tapering inwards and the whole piece seems to have been made out of the columella of a thick shell as the spirals show.

Whistles of terracotta have been found at Taxila. These are either barrel shaped pieces or miniature vessels with perforations. None of these is found at Bhir mound.[6] These are thus totally different from the Nevasa specimen.

It is likely that this specimen may be a handle covering a tang.

Fig. 195 No. 4 A complete specimen, one end tapering to a point, outer surface decorated by incised dots and lumps carved out in relief, hollow, fashioned out of a shell as the flake scars show. Length 84 mm., Maximum diameter 24 mm., and thickness 9 mm. No. 5295, NVS, F, 6. V.

Handles

Two handles were found. Of these, one is a finished product and the other is unfinished.

Both these belong to Period V which is marked by the abundance of shell bangles, rings etc. Finished and unfinished specimens tend to show that Nevasa flourished as a great centre of shell industry. Contact by trade during this period might have accounted for the abundance of big sea shells.

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4. Information by Shri P. P. PANDYA, Archaeologist, Govt. of Bombay.
5. Information by Shri SHRINIWASAN, Superintendent, Department of Archaeology, Government of India.
6. MARSHALL, *op. cit.*, Vol. II, p. 459.

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Fig. 195 No. 5 A cylindrical piece fashioned out of the columella of a big shell, flake scars and spirals of the shell apparent, unperforated. No. 1169, NVS, A, 2. V.

No. 6 A complete specimen, hollow, octagonal and bearing incised grooves as decoration at both the ends which were truncated. No. 1345, NVS, D, 3. (V).

Miscellaneous Objects

These comprise perforated discs or spindle whorls and those that might have been used as stoppers. None of these is illustrated.

IVORY OBJECTS

The objects of ivory were not many. These comprised combs, dice, handles and bangles.

Ivory bangles were by far the largest in the lot. Besides bangles, several rods of ivory with bangle-outlines clearly marked on it were found. It shows that bangles were made locally.

Bangles

These were either plain or decorated. However, the method of making these seemed to be the same. A big hollow rod of ivory was taken and bangles were marked on it as it was turned on a lathe. Then these were removed from the surface of the thick rod. In the same way, from smaller pieces or possibly waste pieces, rings were taken out. Such marked cylinders were also found though in a fragmentary state.

Some of the plain bangles are very thin—3 mm. — and thus stand as evidence for the excellent craftsmanship.

Plain Bangles

These fall into two groups: (*a*) plain bangles with plano-convex section, and (*b*) those with thin rectangular section.

The distribution and measurements of both these are as follows.

(*a*) 36; V-24; VI-12;
Breadth of surface: 8 mm. to 11 mm.
Thickness: 4.5 mm. and 6 mm.
Diameter: 49 mm. and 34 mm.

(*b*) 7; V-5; VI-2;
Thickness: 3 mm. and 5 mm. Very fragmentary.
None of these is illustrated.

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Marked cylinders of ivory

Sixteen such rods with the outlines of the bangles incised on them were found. Six of these belonged to Period VI and the rest to the earlier period.

Waste Discs of ivory

When the ivory rod was exhausted due to the process of taking out rings or bangles from it, what remained was a very thin disc at one end. Seven such discs were found. Of these, three came from the topmost layer and the rest from the layers of Period V.

Decorated bangle pieces

Fifteen fragments of very thin bangle pieces of ivory were found. Twelve of these come from Period V and the rest from the succeeding period.

These pieces are remarkable for their thinness as also for the precision in decorating their outer surface in tiny designs. Some of these were even painted in red and thus offered a pleasing contrast to the white surface. The breadth of the surface varied between 15 mm. and 18 mm. and thickness between 3 mm. and 4 mm.

The illustrated pieces are as under.

Fig. 197 No. 1 Fragment of a hollow cylinder of ivory with outlines of bangles marked on it, some bangles already taken out. No. 260, NVS, A, 2. V. (Diameter 44 mm. and 34 mm.).

No. 2 Similar to above but smaller in size, possibly for rings. No. 704, NVS, B, 2. V.

No. 3 Similar to No. 1 above, with grooved exterior. No. 1281, NVS, G, 2. V.

Fig. 198 No. 1 A cylindrical rod of ivory, showing evidence of turning on a lathe, one end showing shallow pin-hole, possibly a waste piece after rings were taken out. No. 1715, NVS, E, 2. V.

Plain Bangles

Fig. 198 No. 2 Half of an ivory bangle piece removed from the cylinder, tallying in diameter with the marked bangles. No. 1722, NVS, E, 2. V.

Decorate Bangle Pieces

Fig. 198 No. 3 Fragment, broad piece with insignificant ridges at both edges, small circles in relief. Breadth 18 mm. thickness 3 mm. No. 324a, NVS, I, 2. V.

No. 4 Fragment, less broad, rectangular section, outer surface having a pair of a row of circles in shallow relief, space between circles painted. No. 991, NVS, I, 2. V.

No. 5 Fragment, as No. 3 above, rayed sun and circle decoration, undecorated area painted red. No. 1162, NVS, I, 2. V.

No. 6 Fragment, as above, design of semi-circles made by smaller circles around a central dot-circle. No. 986, NVS, I, 2. V.

No. 7 Fragment, row of hyphen-design in shallow relief. No. 981, NVS, I, 2. V.

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Fig. 198 No. 8 Fragment, design of circles and slanting lines in relief. No. 432, NVS, I, 2. V.

No. 9 Fragment as above, but design of wavy circle and dot-circle in relief. No. 502, NVS, D, 2. V.

No. 10 Fragment, design consisting of rows of dot-circles in relief. No. 324, NVS, I, 1. VI.

Dice

A pair of dice, one complete and the other fragmentary, was found. Both these are square in section, and are square cylindrical in shape.

Both belong to Period V, but one is complete in the sense that all the four faces of it are marked with circles, whereas the other has no circles on any of its face. It is likely that it was an unfinished specimen indicative of indigenous make.

Similar dices have been reported from a number of sites in India and they stretch over a wide period.[7]

Fig. 197 No. 4 A complete dice, square in section, every face having concentric incised circles. Length 63 mm. and breadth 10 mm. No. 1156, NVS, C, 3. (V).

Combs

Five fragmentary combs were found. Of these, three belonged to Period IV, one to Period V, and one was unstratified.

The teeth are close set, thin and rounded at the tip. They must have been cut evenly with the help of a thin saw.

The antiquity of combs goes back to Mohenjodaro.[8] Coming to the historical period, they are reported exclusively from Sirkap.[9] Save one, all the rest have a round top and most of these are decorated by incised designs. An ivory comb has been reported from Tripuri in 100 B.C.—200 A.D. levels.[10] Literature of the Gupta and post-Gupta period abounds in references to combs.[11]

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7. SANKALIA and DEO, *op. cit.*, p. 120.
8. MARSHALL, *MIC*, II, p. 532; pl. CXXXII, 13, 21; CXXXIV, 4.
9. MARSHALL, *Taxila*, II, p. 655; pl. 199, Nos. 18-23.
10. DIKSHIT, M.G., *Tripuri*-1952, p. 131; pl. XLIII.
11. UPADHYAYA, B.S., *India in Kalidasa*, pp. 204-05; JOGLEKAR, A.S., *Gāthāsaptaśatī*, pp. 401-02; H. CHAKLADAR, *Social Life in Ancient India*, pp. 110 ff.

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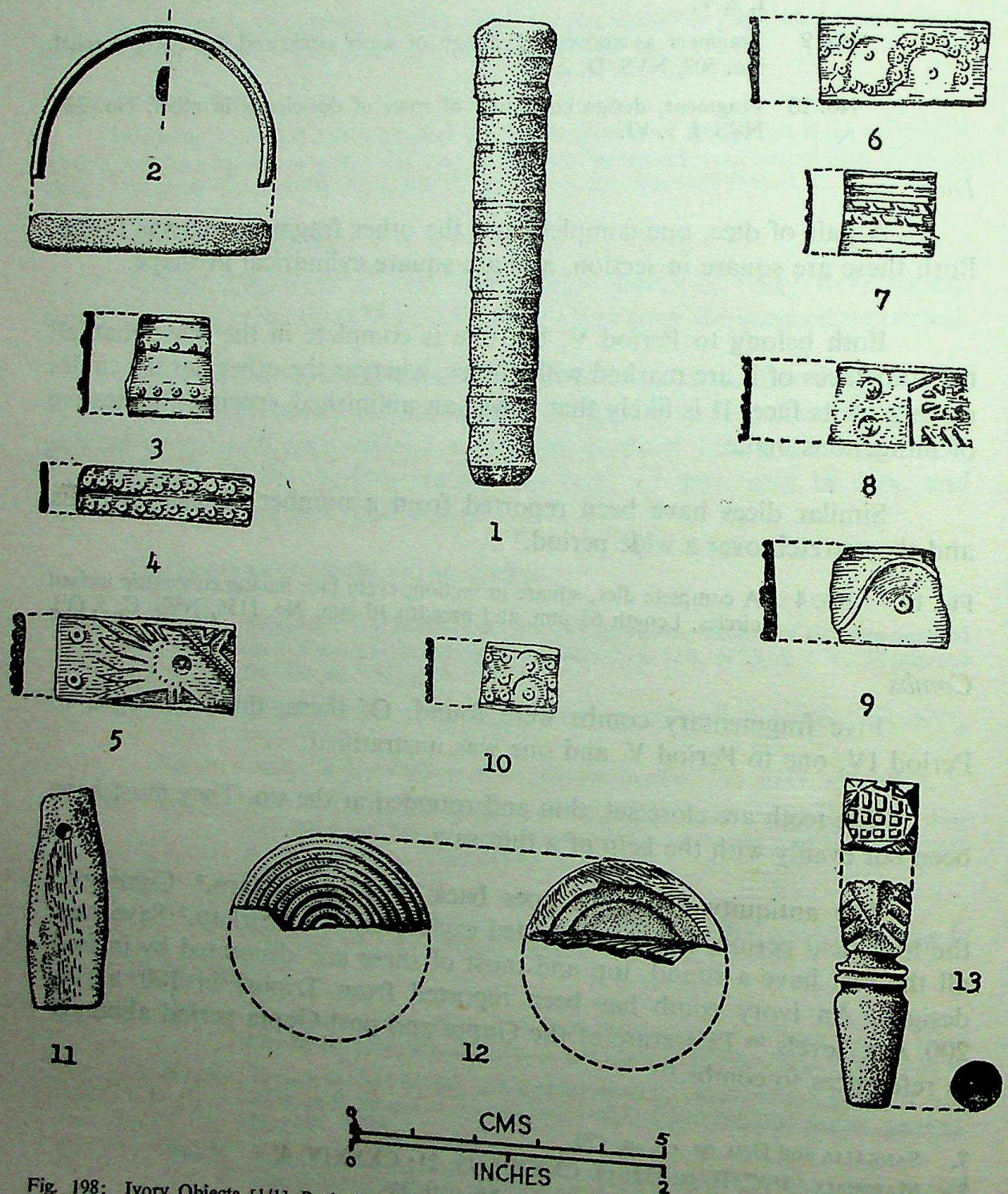

Fig. 198: Ivory Objects [1/1], Rod (1), Plain Bangles (2), Decorated bangles (3-10), Miscellaneous objects (12-13). (See pp. 466-467, 469)

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The Nevasa specimens are all thick varieties and have either a triangular or a rectangular section.

The illustrated specimens are as under.

Fig. 197 No. 5 Fragment, comb of yellowish polished ivory, rectangular section, width 46 mm. and thickness 7 mm. No. 5999, NVS, E, 9. IV.

No. 6 Fragment, as above, but with triangular section, width 39 mm. and thickness 6 mm. No. 1857, NVS, F, 2. V.

No. 7 Fragment, thicker and length of teeth more, triangular section, width 45 mm. and thickness 12 mm. No. 5685, NVS, F, 7. V.

No. 8 Complete specimen, broken in two, teeth fine and close-set, triangular section. Width 41 mm. and height 44 mm. thickness 8 mm. No. 6711, NVS, E, 10. IV.

Handles

Several handle pieces covering the tang portions of some-objects were found. These are mostly cylindrical pieces with a tapering hollow interior. The patent form of decoration was groups of grooves on the exterior.

Of the three, one comes from Period IV and the rest from the succeeding one.

Fig. 197 No. 9 Fragment, plain and unfinished exterior, interior a tapering hollow (to receive a tapering tang). No. 6681, NVS, E, 8. IV.

No. 10 A hollow piece of ivory of irregular tubular shape, polished surfaces, might be a handle. No. 1349, NVS, D, 3. V.

Miscellaneous Objects (Figs. 197, 198)

These include a stopper-like object, decorated discs and possibly a pendant.

Fig. 198 No. 11 A flat-based piece of ivory with the top truncated and a neat perforation near the head, a pendent? No. 1094, NVS, E, 2. V.

Fig. 197 No. 11 A complete specimen of possibly a stopper, plano-convex, rivetted with an iron nail for hold. No. 305, NVS, a, 1. VI.

Fig. 198 No. 12 Half of a disc of ivory with one surface having concentric grooves. No. 843, NVS, I, 1. VI.

No. 13 A complete specimen, cylindrical but tapering towards the truncated end, grooved square pedestal bearing on top a bud-head with side-leaves, top incised with random lines. No. 2104, NVS, B, 5. V.

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XV

STONE OBJECTS[1]

The stone-objects from Nevasa can be classed into following categories:

A : Hammer Stones.
B : Anvils.
C : Saddle Querns.
E : Legged Querns.
E : Mullers.
F : Sharpeners.
G : Weights for the Digging sticks.
H : Rotary Querns.
I : Dabbers.
J : Miscellaneous objects.

A. *Hammer Stones*

Twenty-four specimens were found. Twenty-two came from the Chalcolithic deposit, and one each from the Satavahana and Indo-Roman deposits. The latter specimens probably were derived from the former.

These are simple river-worn trap pebbles of shapes varying from a disc to an elongated drop. Their sizes vary between 68 mm. and 208 mm. in length. They show no sign of dressing but bruised regions bear testimony to the nature of their use.

After the nature of the bruised business surface these specimens can be classed into two groups:—

I The bruised surfaces are restricted to the ends of the specimens. There are ten specimens in this group. Six of them show slightly battered ends. All the specimens are of longer shapes.

II The bruised surface is continuous, all round the periphery. Fourteen specimens come under this category. These have discoid or broad ovalloid shapes.

1. Similar finds from the Narmada valley have been discussed in detail in a separate paper. These have been illustrated in the said paper as well as in the *Report on the Excavations at Maheshwar and Navdatoli (1952-53)*. For the above reason only the trapezoid saddle querns have been illustrated. Similar saddle querns were not found in the above mentioned sites. See K. D. BANERJEE "Querns and Anvils from the Narmada Valley", *BDCRI., Vol. XVIII*, pp. 8-16.

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The battered surface, as seen in type I, can only be produced by repeating similar strokes at a particular angle or in other words using them as hammers. Their association with microliths and neolithic type of celts in different stages of manufacture strengthens the hypotheses.

The nature of the continuous bruised surface in type II specimens appears to have been produced as a result of rubbing, using abrasives like sand as medium. If so, then these were used as rubbers rather than as hammers. Probably these were used for grinding and polishing the pecked neolithic type of celts found in their association. Association of such hammers and rubbers with neolithic type of celts and microliths in Europe, Egypt, Indo-China, Indonesia and other sites in India further strengthens the hypothesis.[2]

B. *Anvils*

Seventeen specimens were found. Four came from the lowest layer of the Satavahana deposits in different trenches. Very probably these were displaced from the Chalcolithic deposits whence the remaining thirteen came.

Like hammer-stones these are actually river-worn trap pebbles but of larger dimensions. The length varies between 132 mm. and 318 mm.[3] Unlike the hammer-stones the business surface is neither at the ends nor along the periphery. The flat and wide surface is the business region. The flat surfaces are produced due to continuous use. After the nature of the business surface these are classed into four types. These four types represent four stages of use.

I Business surface on one side only. The other side shows convex, original pebbly surface. There are six specimens in this group.

II Business surface mainly on one side. Other side shows a small smooth business surface. This type, thus, shows the beginning of use of the other side as well. There are four specimens in this group.

2. It is to be noted that similar specimens were found in large number from the Chalcolithic deposits at Navdatoli. Though two neolithic type of celts—one nearly seventy-five years before and one in 1957-58—were found on the surface, not a single one was found in the excavation. This fact may suggest a possible alternative use.

3. Such big pebbles do not occur locally along the river. They were probably transported from the localities near the hills. Certain sites on the Godavari, not very far from the site, also contain such big pebbles.

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III Business surface on both sides. Specimens of this group are naturally thinner. There are three specimens in this group.

IV Giant-sized anvils showing all the characteristics of a quern.[4]

SANKALIA[5] considers them as small querns for grinding bone tools of mesolithic antiquity. We do not find any bone tool associated with it. But these have been found in association with fragments of neolithic type of celts in different stages of manufacture from a factory site.[6] These were also used as the upper or moving piece of a quern.[7] In type II we find that inspite of an existing flat surface, the convex side was utilized. It is evident that a convex business surface was preferred where the surface, on which these were to be rubbed, had a depression or concavity in it. As a matter of fact, all the associate saddle querns of the Chalcolithic period show such concavity. Type III specimens are exact parallels of the grain-rubbers from the Neolithic Fayum.[8] Thus, we can reasonably surmise that these anvils were used only during mesolithic times. Since neolithic times they developed an added function, that of a grain-rubber.[9]

C. *Saddle Querns*

Nineteen specimens were found. These are rather flat pieces, dressed from big blocks of basaltic trap. A big and wide grinding region is the business surface. Unlike in the case of anvils, the flat business surface is deliberately prepared; it is not the result of use. These can be classified into three techno-typological groups.

I Crude, shapeless specimens where the primary attention of the manufacturer was concentrated only to make the grinding surface. All the eight specimens belonging to this group came from the Chalcolithic deposit.

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4. This group is included within the anvils because of their genetic relationship. Regular querns are prepared from big blocks of stone and not from pebbles. Besides, in these specimens, unlike in the querns, the flat surface is not prepared but is the result of use.
5. SANKALIA, H. D., "Cultural Significance of the Saddle Querns", *Jr. Anthropological Soc. of Bombay*, New Series ,Vol. IV, No. 1.
6. See fig. 73.
7. Mullers were virtually absent during the Chalcolithic period.
8. CATON-THOMSON, G. and GARDNER, E. *The Desert Fayum*, Vol. II, pl. 7, fig. 2, 1953.
9. With the coming of sharpeners and mullers, both the functions of the anvils were lost and these specimens went out of existence.

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II Shapely specimens with rectangular outline and trapezoid cross-section. The sides slope inwards towards the small square or rectangular base. There are seven specimens of which four came from the Satavahana deposit and the remaining from the topmost layer of the Muslim period. The latter ones, evidently, are displaced materials from the Satavahana deposit. (Fig. 204.)

III Shapely, flat, sub-triangular specimens with straight sides. All the four specimens belong to the Muslim period.[10]

D. *Legged Querns*

Thirteen specimens were found—seven from the Indo-Roman deposit (Period V) and six from the topmost layers of the Satavahana deposit. These may be dated in this site to the Indo-Roman period. As the name implies, these are querns with rectangular body supported by four legs. All the specimens are made from trap blocks. According to the nature of the legs the specimens can be classed into three evolutionary groups. These groups have however no relation to the time-scale.

I Legs partly differentiated. In these specimens the front as well as the hind pair of legs remain joined together as one piece upto two-thirds of their length. There are seven specimens in this group.

II Legs differentiated but not separated. In these specimens each pair of legs is connected near the body. Five specimens.

III Legs differentiated and separated. Only one specimen represents the group.

E. *Mullers*

One hundred and eleven specimens were found. Only one came from the Chalcolithic deposit, sixteen from the Satavahana and eleven from the Muslim deposits. Remaining eighty-three specimens belong to the Indo-Roman deposit. These are cylindrical or elongated cubical specimens carefully dressed, from the trap blocks, to the respective shapes. In the course of their use they attained different shapes and cross-sections.[11]

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10. Incidentally, this is the modern type in use almost all throughout India and Pakistan.

11. See Inventory, p. 474.

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Dumb-bell shapes or specimens with bulging ends resulted due to their use on legged querns, whose breadths were smaller than the mullers' lengths. Many specimens were broken and subsequently re-utilized. The mullers were used, as in modern times, as the pin or the moving piece of the quern. Many of the shapes closely resemble the ones at present being used in different parts of India and Pakistan.

INVENTORY OF HAMMERSTONES, QUERNS, ANVILS AND MULLERS

Object	Type	Periods				Total	GRAND TOTAL
		Muslim	Indo-Roman	Satava-hana	Chalco-lithic		
Hammer-stones ..	Business surface on the ends	—	—	—	10	10	24
	Business surface around the periphery	—	1	1	12	14	
Legged Querns ..	Legs partly differentiated	—	6	1	—	7	13
	Legs differentiated but not separated	—	1	4	—	5	
	Legs differentiated and separated	—	1	—	—	1	
Saddle Querns ..	Irregular shaped	—	—	—	8	8	19
	Trapezoid shaped	3	—	4	—	7	
	Sub-triangular cubical	4	—	—	—	4	
Anvils ..	Business surface on one side only	—	—	1	5	6	17
	Business surface mainly on one side	—	—	—	2	2	
	Business surface on either side	—	—	2	5	7	
Mullers ..	Quern type	—	—	1	1	2	111
	Cylindrical	—	6	3	—	9	
	Cylindrical with wider middle (barrel shaped)	—	3	—	—	3	
	Cylindircal ends, body bi-convex in section	—	6	—	—	6	
	Cylindrical ends, body ovalloid in section	—	2	—	—	2	
	Cylindrical ends, body plano-convex in section	—	2	—	—	2	
	Cylindrical ends, body rectangular in section	—	1	—	—	1	
	Bi-convex section	—	15	1	—	16	
	Ovalloid section	6	6	4	—	16	
	Triangular section	—	5	—	—	5	
	Plano-convex section	—	4	2	1	7	
	Dumb-bell shaped	1	8	—	—	9	
	Rectangular section	1	15	5	—	21	
	Square section	—	1	—	—	1	
	Re-used from the broken piece	3	9	1	—	13	
	TOTAL	18	92	30	44	184	184

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F. *Sharpeners*

Twelve specimens were found. These came from the upper layers of the Satavahana deposit. Remaining ones came from the Indo-Roman deposit. These are comparatively flat pieces of stone-slabs, sometimes well-worked and shapely. Fine grained trap or epidiorite was used. They can be classed into four techno-typological groups.

I From Pebbles. There is only one specimen. Pebbles of above mentioned rocks are comparatively very rare and hence is the paucity of specimens of this type.

II From flat stone-slabs. Occurrence of epidiorite in veins and dykes was the source of such specimens. There are seven specimens—five from the Indo-Roman and two from the Satavahana deposits.

III Well dressed, shapely, elongated, cubical specimens. Dykes were the source of this material. There are two specimens—one each from the Indo-Roman and the Satavahana deposits.

IV Legged specimens recalling miniature legged querns. Dykes were the source of such specimens. Legs are very short. There are two specimens—both from the Indo-Roman period.

In some of the specimens ridge-like depressions are found. These suggest that these were used for sharpening the edges of steel tools or weapons. Incidentally, these have replaced the sharpening function of the anvils. Type I recalls the anvils though the former has got a completely smooth, shining business surface.

G. *Weights of Digging Sticks*

Four specimens were found. All of them were displaced from the Chalcolithic deposit. One was found in the topmost layer of Muslim period. Remaining three were found from the Indo-Roman deposit. These are ring stones, *i.e.*, circular or ovalloid stones with a central perforation. The perforation is not complete in three specimens, one of which shows perfora-

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tion on one side only. In another the specimen was rejected because the perforation was made not in the same position from either side. It becomes evident that the perforation was made by rubbing the area to be perforated with sand by a piece of wood or a cylindrical piece of stone. Perforations were made from either side in same position and the resultant perforation was necessarily hour-glass shaped. All the specimens are made on trap.

It is obvious that they were hafted, the perforation functioning as socket. They could possibly be used in two alternative ways—as a mace-head or as a weight of a digging stick. Perforations in the specimens from Nevasa are small in dimensions in comparison to the size. If they were used as mace-heads, then the end of the shaft had to be made narrower. It is unlikely that such narrow region of a wooden or bamboo shaft will not snap if the weight is used in the free end of the haft. On the contrary, in the case of a digging stick too the specimen was to be likewise hafted. The hafted region was held in the hand by the manipulator. This did not give any occasion for this end of the shaft to snap because the force applied to it was comparatively less.

System Of Weights At Chalcolithic Nevasa

One hundred and three solid stone balls were found from the Chalcolithic deposits at Nevasa. Fifty-five of them had perfectly cylindrical body. The remaining ones were broken in different degrees. The fifty-five specimens were weighed. It was found that they fall into several weight groups, and that those groups were found to stand in a simple ratio with one another. Taking the lightest weight group as the unit, the different ratios, that the different weight groups make, were first worked out. The mean of each group was divided by the ratio it makes with the unit. The quotient was then multiplied by the number of specimens in the group. The products of all the groups were added. The total was then divided by the total number of specimens (fifty-five). The quotient, thus arrived at, was the calculated value.[12] For convenience's sake half of the calculated value has been taken as unit.

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12. The method used here is the well-known method of Hemmy. Ref. Marshall, J *Mohenjodaro and Indus Valley Civilization*, Vol. II, pp. 589-595.

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The system, especially in regards to the ratio, shows closer resemblance with the light Babylonian system than with the Harappan system.

a	*b*	*c**	*d**	*e**	*f**	*g**	*h*
S. No. of the group	No. of specimens in the group	Mean weight of the group	Mean deviation	Calculated value	Difference between cols. *c* and *e*.	Ratio	Designation
1	1	678.3	—	699.0	20.7	300	R
2	2	488.07	1.55	489.3	1.23	210	Q
3	2	346.3	1.32	349.5	3.2	150	P
4	2	314.3	2.25	314.55	.25	135	O
5	2	284.3	1.4	279.6	4.7	120	N
6	3	198.8	.6	209.7	10.9	90	M
7	2[13]	126.3	1.3	139.8	13.5	60	L
8	2	110.11	1.39	116.5	6.39	50	K
9	5	105.32	.79	104.85	.53	45	J
10	4	69.1	1.12	69.9	.8	30	I
11	3	54.82	.86	55.92	1.1	24	H
12	6	34.89	1.32	34.95	.06	15	G
13	2	22.16	1.01	20.97	1.17	9	F
14	5	15.4	.556	13.98	1.42	6	E
15	7	9.24	.433	9.32	.08	4	D
16	4	6.73	.53	6.99	.26	3	C
17	3	4.6	.6	4.66	.06	2	B

*Weights in gms.

H. Rotary Querns

The excavations[14] yielded several bee-hive type of rotary querns or grinding mills. These show extra-Indian affinities. Evolution of its type in India also parallels that noticed in Europe.

13. Both the specimens are slightly fractured.
14. For a brief report on these, see *Antiquity*, June 1959, Fig. 1, p. 129.

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In all there are 12 complete pieces, besides broken fragments.[15] Before discussing their significance, their stratigraphical position and details about their sizes are given below :

Sr. No.	Reg. No.	Object	Diameter	Height	Trench	Layer	Vertical Depth
1	2	3	4	5	6	7	8
1	5703	*Hopper or Upper Stone*	28 cm.	16 cm.	E	8	19 ft. 8 in.
2	5704	,,	26.9 cm.	15.9 cm.	,,	,,	,,
3	5705	,,	27.9 cm.	16.5 cm.	,,	,,	,,
4	5706	,,	26.5 cm.	17 cm.	,,	,,	,,
5	284	,,	16.5 cm.	16 cm.		1	1 ft. 4 in.
5A	124	,,	24.1 cm. (Neck) 15.1 cm. (Bottom) 31.2 cm.	15.6 cm.	Surface		
5B	812	Fragment	—	—	I	2	
6	5704A	*Lower Stone*	28.4 cm. (Top) 17 cm (Bottom)	7.4 cm.		8	19 ft. 8 in.
7	600	,,	20.5 cm.	5.2 cm.	B	1a	4 ft. 5 in.
8	5703A	,,	30 cm. (Top) 23.7 (Bottom)	8.7 cm.	E	8	19 ft. 8 in.
9	5708	,,	33.2 cm.	11.5 cm.	E	8	,,
10	X	,,	26 cm.	9.2 cm.	Surface		
11	Y	,,	29 cm.	7.8 cm.	,,		

Thus five of the upper and four of the lower stones are stratified. Of these Nos. 3 and 8, and 4 and 6 seem to make a pair. The rest were found separately. All are made of basaltic trap, excepting the pair 3 and 8. This is of gritty sandstone (Fig. 199).

As the illustrations show, the upper stones or the hoppers are high and heavy. The transverse or lateral socket for a radial or horizontal handle is also placed quite high up in the sides. In the first three, the holes for putting in the grain are like a wine-cup, broad at the top and narrow at the bottom. In Nos. 5 and 5A which are late stratigraphically, these holes have steeply sloping sides (Fig. 199).

Externally all have slightly concave sides, which is very much constricted in No. 5A. This is again comparatively a late feature as will be shown below. The bottom or the underside is slightly concave so as to

15. Four more fragments:—Two from layer 2 and two from layer 1.

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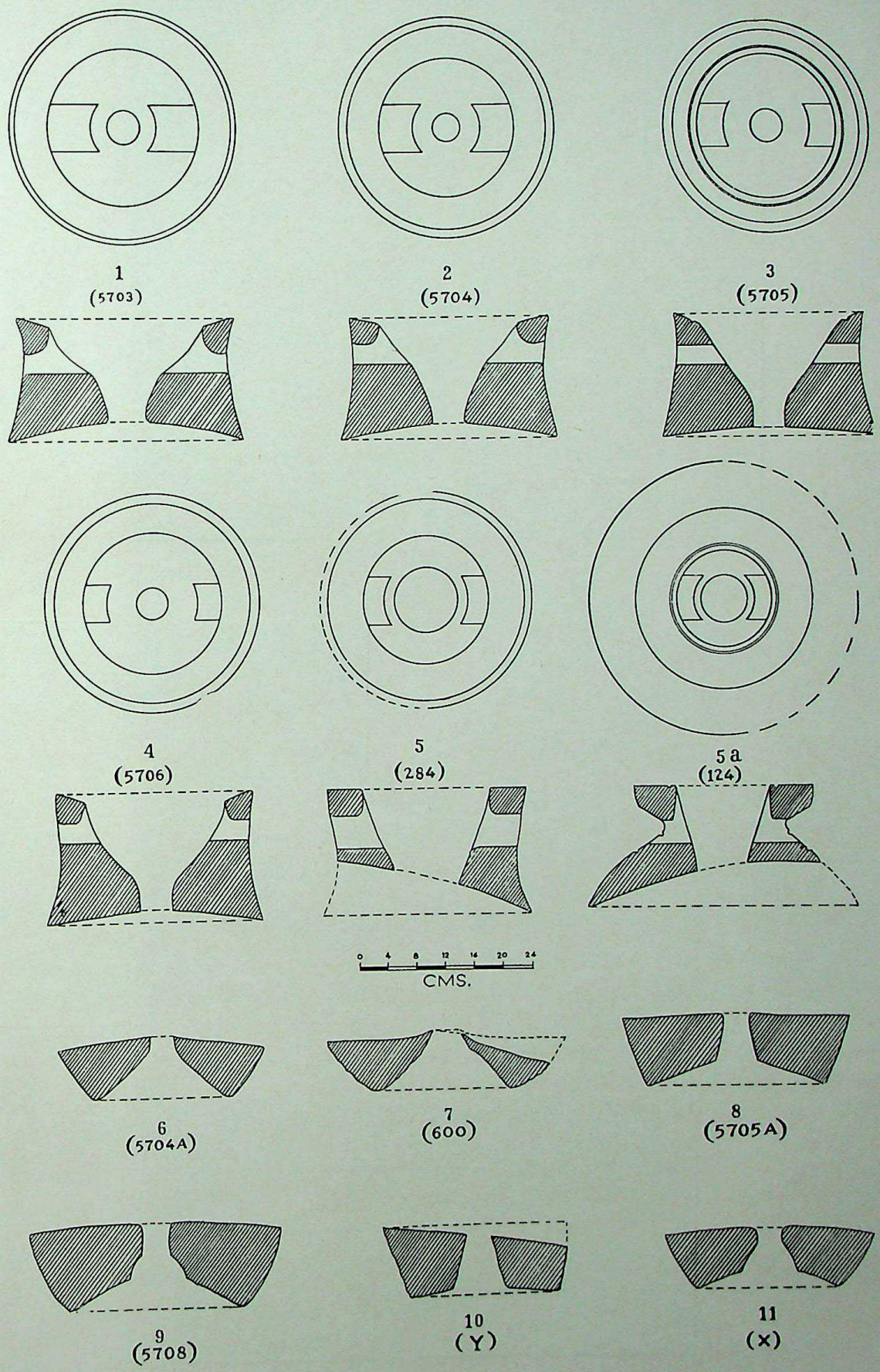

Fig. 199: Rotary Querns of Nevasa Type [1/2]. (See pp. 478-481)

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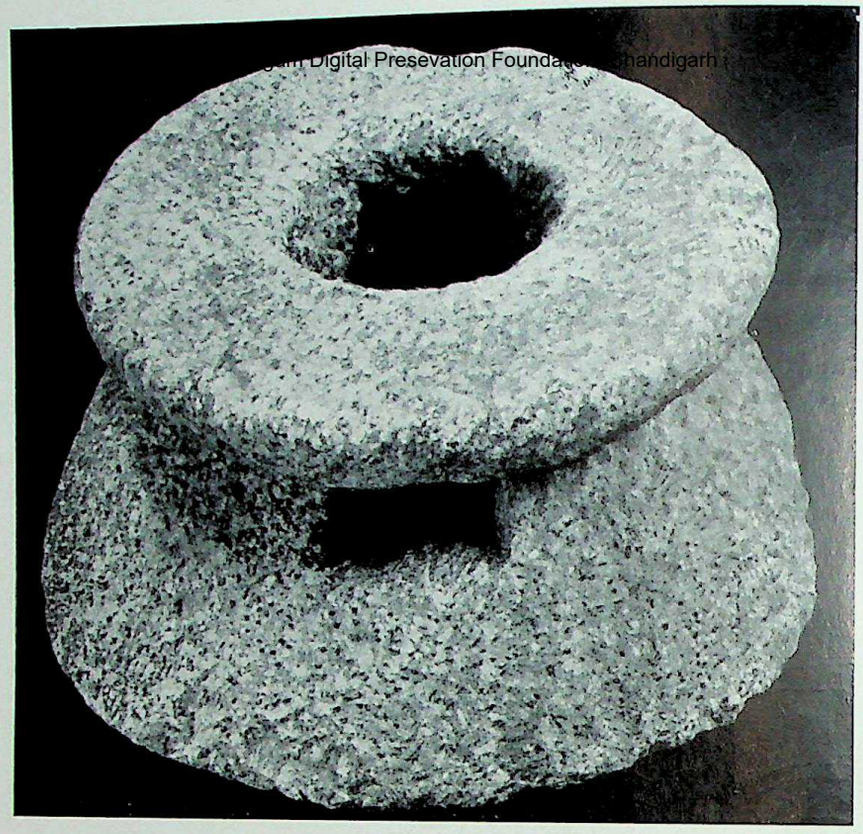

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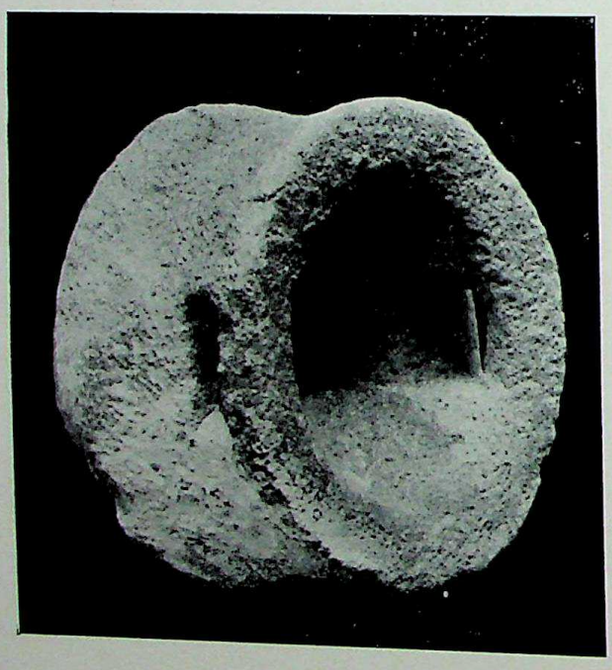
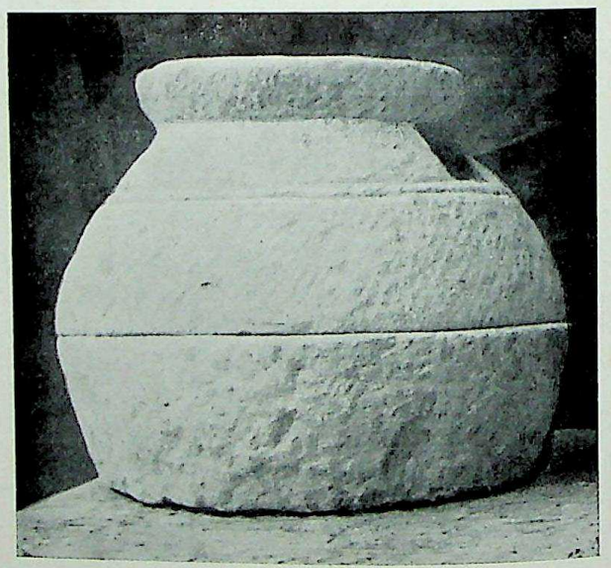


1



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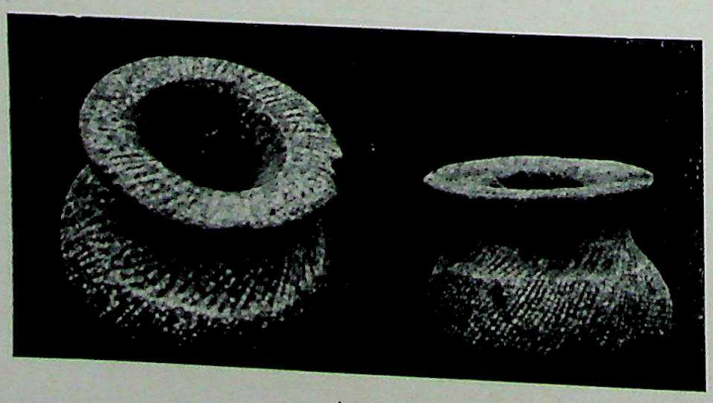

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Fig. 200: Rotary Querns. 1 Nevasa, 2 Tadkod, 3 Lothal, 4 Sirpur. *(See pp. 485-486)*

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fit in with the similarly convex surface of the lower stone. All the latter have flaring sides, and hourglass-like through sockets for fixing in the tenons.

These querns are quite unlike those in use today. Not only are the latter lighter, though bigger and broader, but all have a socket on the rim for a vertical handle, whereas these have a transverse socket. Nothing like these querns had been found anywhere in India before. The nearest parallel is from Taxila. Here MARSHALL found, for the first time, rotary querns[16] from the late Saka-Parthian and slightly later periods, of the type in use today. Along with these, was also recovered a rotary quern[17] which is heavy and ponderous. This has a groove or a socket in the side and it runs through the whole length of the stone. (Unfortunately the drawing does not illustrate this feature). MARSHALL dates this to the 5th century A.D.

Recently Dr. M. G. DIKSHIT found over 60 pieces of the type shown in No. 5A from his excavations at Sirpur.[18] These are thus datable to the 6th-7th century A.D. This is also the probable age of our No. 5A.

Stratigraphically and even typologically the Nevasa types (Nos. 1-4 and No. 5) are the earliest. They were found on the floor of the earliest Andhra or Sātavāhana house. This immediately overlies a two to three feet weathered layer of blackish soil; the latter in its turn seals a thick deposit of Chalcolithic Culture. With the querns are associated a black-and-red pottery, a few sherds somewhat resembling Megarian ware (kindly identified by Sir MORTIMER WHEELER and Dr. (Miss) KENYON to whom the sherds were sent for examination) and early Sātavāhana coins. The layers sealing this house yielded the Mediterranean amphora and red polished sherds, while the black-and-red ware is *almost absent*. Thus the Nevasa querns can be assigned to a period not later than the 2nd or 1st century B.C.

Before attempting a comparison, it may be mentioned that to satisfy our curiosity and that of a large number of visitors to the excavations, a lateral wooden handle was inserted, and so also a wooden pin in the lower

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16. JOHN MARSHALL, *Taxila* (Cambridge 1951), Vol. II, pp. 487-88, and Vol. III, pl. 140,l,k, and pl. 143,h.

17. *Ibid.*, Vol. III, pl. 140,m.

18. Information kindly supplied with drawings and photographs on 5-12-56. See Fig. 200,4 and Fig. 203, T. 2.

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stone, and wheat and millet were ground on a complete quern. This gave us a rather course flour, as is used for certain dishes in India today.

The nearest extra-Indian parallel to which we can refer are some of the types of CURWEN.[19] If we disregard the external form, then the Nevasa rotary querns might be compared with the Hunsbury Type (Figs. 2, 3, 4, 5, 6, 7, 11, 12, 13, 14). Like the Nevasa specimens, they were found in a stratified context (the Iron Age AB, hill fort of Hunsbury). They form a homogeneous series. Their upper stones are high and narrow. Of these, the closest similarity is afforded by the specimen from Thurmaston, near Leicester (Fig. 11). Though its upper stone has inward tapering sides, it has a well placed, cup-shaped feeding socket, and a through lateral socket on the side for a horizontal handle. Unfortunately it is " without dating associations ". Some of the Puddingstone Type[20] have also a horizontal handle-socket. The forms of the feeding sockets of Nevasa querns are also similar to those in Hunsbury type.

This typological similarity creates an interesting problem. How did a quern type which had become familiar in 2nd or 1st century B.C. in England, and at least by 2nd century B.C. in Greece and her islands turn up in inland Deccan at about the same time? The absence of the amphora and red polished sherds from this stratum at Nevasa seems to rule out the Roman trade which became intensive soon after 1st century B.C. The presence of a few sherds resembling a Megarian bowl suggests that the west coast, like Arikamedu on the east coast, might have felt the effect of the pre-christian Roman influence. The late Professor V. Gordon CHILDE, on seeing these querns in our Museum, had suggested, that the influence might be due to the Indo-Greeks,[21] who were definitely in Western India, by the 2nd century B.C.[22]

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19. CURWEN, *Antiquity*, XV (1941), p. 17.

20. *Ibid.*, p. 21.

However, in one important respect the Nevasa querns differ from the Hunsbury querns. In the former, the grinding surfaces are convex in the upper and concave in the lower stone as in Wessex and Sussex types; in the latter they are flat.

21. Cf. CURWEN, *Antiquity*. XV (1941), p. 16, "They suggest that the rotary principle in milling may have been one of the contributions of Greek culture to modern civilization".

22. As CHILDE, *op. cit.*, pp. 24-25 has shown on literary evidence, Indo-Greek armies as well as merchant ships could have very well introduced this "invention" into India. As to the actual country of origin, no definite data are available. Syria-Palestine in about the 8th-7th century B.C. are likely sources.

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1

2

3

Fig. 201: Rotary Querns.— 1 from Nagarjunikonda, Type 3.—2 from Sirpur, Type 5.—3 Lower stone of Type 1 from Nevasa.—(See pp. 486).

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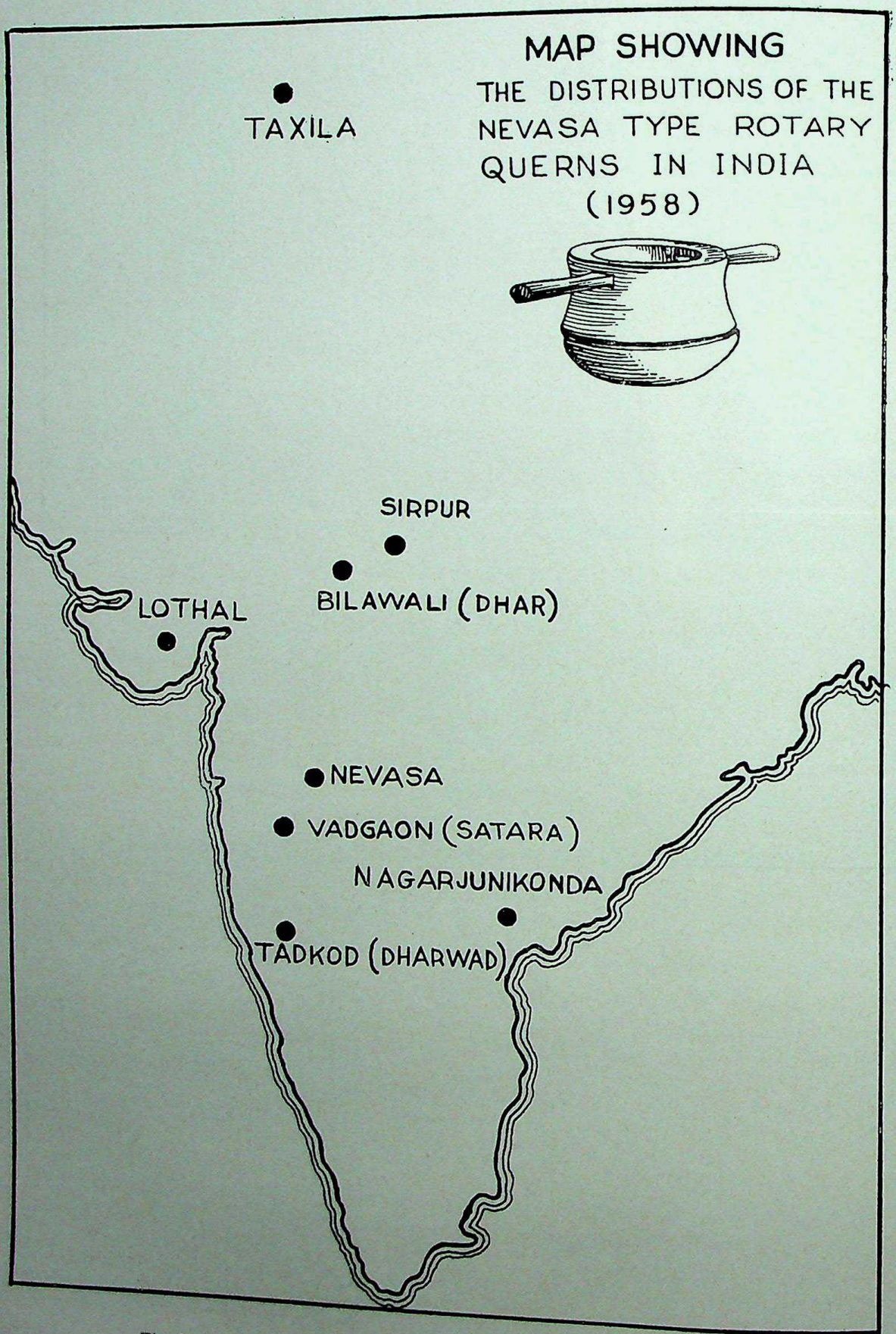

Fig. 202: Distribution of Nevasa Type of querns in India. (See p. 485)

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The subsequent evolution of this quern type also follows the one in the West.[23] Already at Nevasa (No. 5A Type 2) we find the upper stone having a deeply constricted waist. This type continues till today in some parts of Madhya Pradesh, as Dr. DIKSHIT informs me. At Taxila itself, along with the quern with a transverse socket (Taxila A), those with vertical handle also existed (Type 4), indicating that the former was found to be too cumbrous. (See Fig. 203).

Though all the data are not yet available, a gradual upward placing of the horizontal socket is noticeable. In a piece recovered by me from a mound at Bilawali, near Dhar (Type 3) in Madhya Pradesh, this socket is almost flush with the surface. My pupil, Dr. K. D. BANERJEE tells me that such types are still current in certain districts of East Bengal. (Now E. Pakistan). Then in the uppermost layer at Nevasa (Type 5), we have the type current today.

The 'philology' or the etymology of the words in Indo-Aryan languages[24] is very significant. In Sanskrit a handmill is called *yantrakam*, in Pāli *yantaṁ* (machine), Prākrit *jantaṁ*, Romani Syrian, (which is supposed to have separated from the Romani in 2nd or 1st cent B.C.) *jándri* (mill), Dardic kalasha *yjonter*, Pashai (a dialect of Dardic) *źār*, Assamese *zāt*, Bengali *iâtā*, Hindi *jâtā*, Panjabi *jand*, *jandar*, Lahndā *jandar*, Sindhi *jandru*, Marathi *jāte*, Soghdian *yaturu*, Nepali *jâto*. Thus in every one of these languages, the rotary quern was recognized as a machine. Furthermore, while the names in various Indian regional languages are certainly late, the occurrence of the word *yantram* in Sanskrit,[25] Pali and Prakrit and the European Romani Syrian as *jándri* implies a much prior existence. This lends support to the view of the late V. Gordon CHILDE[26] that " it may turn out that the

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23. Or we might assume the existence of "two families" of querns, as done by CHILDE, V Gordon *op. cit.*, XVII (1943), p. 19.
(i) Spanish or Western Mediterranean, and
(ii) Greek or Eastern Mediterranean.

24. TURNER, Ralph Lilley, *A Comparative and Etymological Dictionary of the Nepali Language* (London) 1931, p. 213. It is interesting to note that in the Dravidian speaking south, the rotary quern is almost unknown, nor is there a word for it. For the usual dish is rice and its products. If a dough is necessary, it is prepared with a pestle on a flattish saddle quern, or a quern with a deep hole, after soaking it in water overnight.

25. There are two other words in Sanskrit, viz. *Chakra* and *Peshaṇa* meaning a rotary quern or a mill. But their antiquity is not established.

26. *op. cit.*, XVII (1943), p. 24.

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Phoenicians or some people in Asia Minor developed the old Syro-Palestinian paint-grinder, through some device like that first described" (by von OPPENHEIM from Tell Halaf).[27]

In this context a hopper only, found from the excavations at Lothal, a late Harappan site, gains some significance. This site is on the east coast of Saurashtra, about 50 miles south of Ahmedabad. According to its excavator, Shri S. R. RAO, all the deposits, though divisible into sub-phases, belong to one cultural period.[28] Thus, the quern in question should be regarded as late Harappan. Typologically, however, it resembles our Type 5A found from Nevasa, Dharwad[29], Vadgaon[30], Sirpur, and still in use in a modified form in East Bengal, though the Lothal specimen has a narrower and symmetrical, round central socket for putting in the grain. If this quern is indeed so old as the site, then it may help us in pushing back the antiquity of the rotary quern to some time in the late 2nd millennium B.C. However, it is much more likely, though not yet recognized, that the piece belongs to the early historical period, and its geographical position—Saurashtra, a region which had felt the Indo-Greek contact much more and earlier than other inland regions—seems to confirm this view.

In summary, then, the following provisional line of development may be suggested (See Fig. 203).

Type 1	Type 1a	Type 2	Type 3	Type 4	Type 5
Nevasa, Taxila A.	Tadkod.	Nevasa, Lothal, Sirpur.	Bilawali, Nagarjuni-kondā.	Taxila B.	Nevasa, Modern Taxila B.

27. In this connexion, it may be mentioned that in the Syrian epic of Baal, Anat is said to grind the god Mot with millstones. Cited by CRAWFORD, O.G.S., *The Eye Goddess* (London 1957), p. 19.

28. *I.A.R.*, 1955-56, p. 6.

I happened to see the piece in Shri RAO's collection at Baroda in 1957, and recognized it as a rotary quern. Shri RAO very kindly supplied me its photograph. It is reproduced here with his permission as well as that of the Director General of Archaeology in India. Since this was written, Lothal has yielded Late Harappan material. See *I.A.R.*, 1958-59, pp. 13-14.

29. The specimen is from Tadkod, Dharwar District. I saw it in the museum of the Kannada Research Institute, Dharwar in 1956. It is reproduced here by the courtesy of its Director.

30. Near Satara. Information kindly supplied by Shri INAMDAR of the Aundh Museum.

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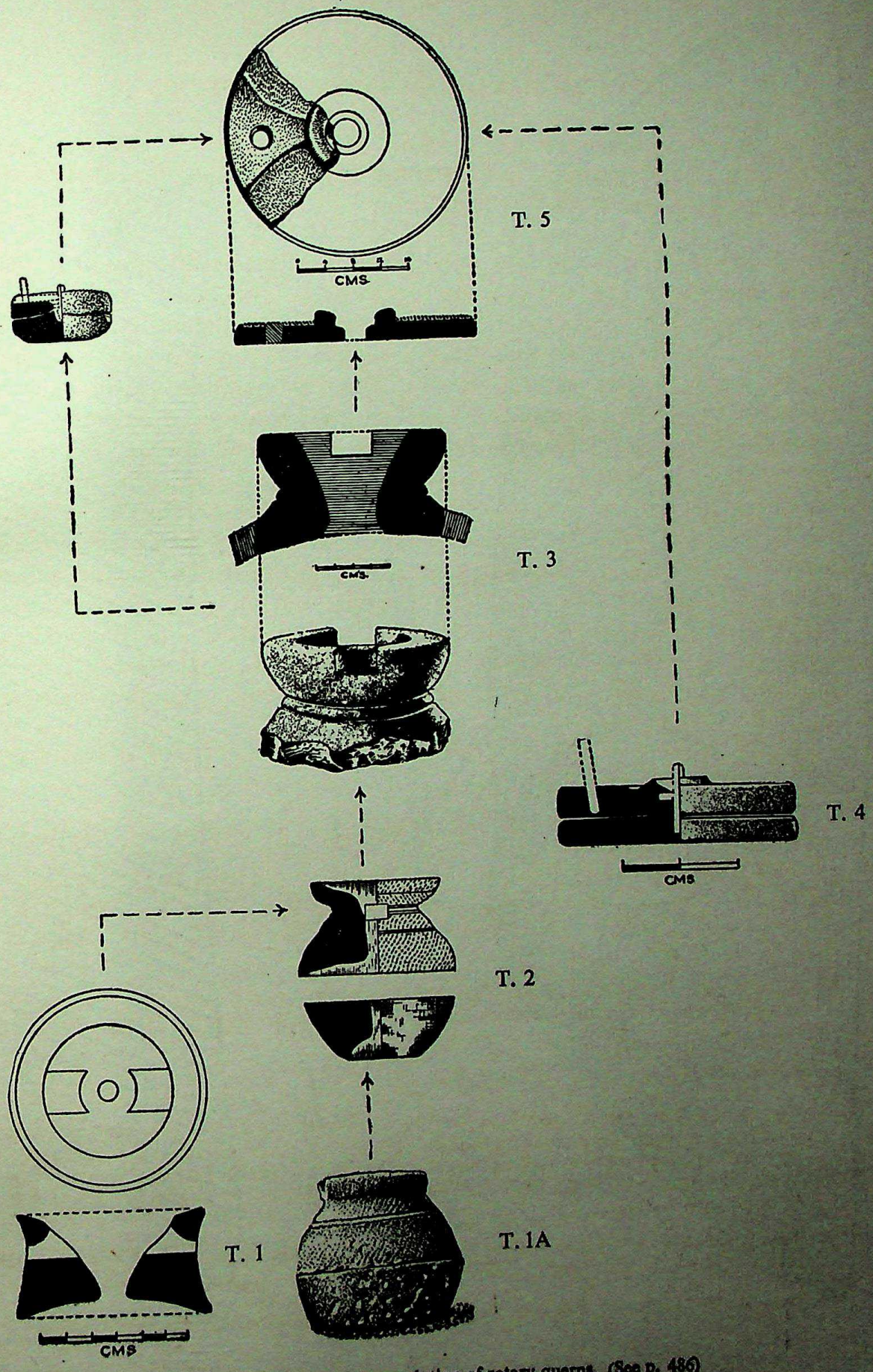

Fig. 203 : Chart showing evolution of rotary querns. (See p. 486)

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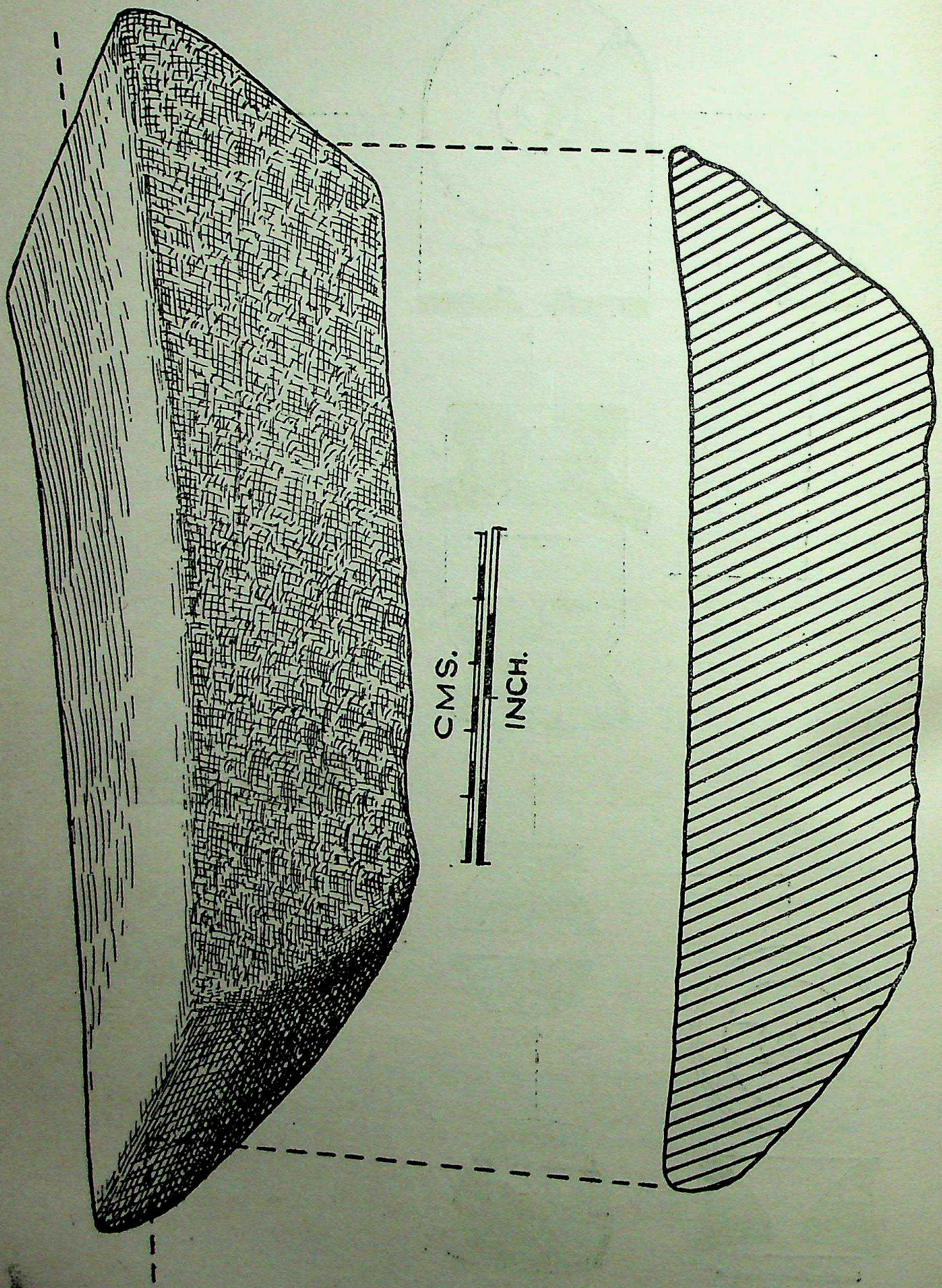

Fig. 204: Saddle Quern. Nevasa. (See p. 473)

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This picture is likely to be filled up by more stratigraphical data. But it will be seen that the development follows the line or lines as in Europe.

In one sense only this machine did not follow its development or use in the West. A rotary quern has never been used commercially. Since its introduction in India about 2nd or 1st century B.C., though we have some very late large specimens belonging to institutions, mass grinding of grain has been unknown in India. Until the introduction of power mills in cities and villages, *every* household, however small or big, had its own rotary quern or querns. These were worked by the women folk, usually in very early hours of the morning. This practice has given rise to some sweet and significant folk songs. But the reason why a rotary quern never become commercially important seems to be due to the existence of caste-system. However, the manufacture of rotary querns, as those of the saddle querns, has given rise to a class of artisans.

Besides rotary and saddle querns, sling balls, and mullers a few other objects of stone were found. These include dabbers, decorated pieces and other fragmentary objects.

Dabbers

Four dabbers were found. Two of these belong to layers of Period V, one to that of Period IV and one to the levels of the Chalcolithic period (Period III)

All these are almost alike in shape, i.e. with a convex broad bottom, a knobbed hold and concave sides. This is remarkable as it shows the continuity of certain techniques of pottery making.[31]

Those of Periods IV and V are made of trap with the surfaces not smooth. It is likely that these were not much used. Taking into consideration the abundance of other stone objects, it may not be wrong to hold that such dabbers also were made locally.

The dabber belonging to the Chalcolithic levels is made of charnokite and is smoothed and polished all over. This material does not seem to be

31. Even now the potter, for instance at Vajreshwari, District Thana, uses an identical dabber of stone.

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local. If it indeed turns out to be from a distance, it will raise interesting points of culture or trade contacts.

The measurements of these pieces are as follows.

No.	Period	Height	Diameter of base	Diameter of knob
7648	V	73 mm.	72 mm.	57 mm.
818	V	73 mm.	87 mm.	58 mm.
7070	IV	69 mm.	75 mm.	62 mm.
7648a	III	67 mm.	74 mm.	51 mm.

The above details indicate a remarkable uniformity and standardisation in the art of making dabbers.

It may be pointed out here that identical dabbers but often made of wood are used by potters in Maharashtra and Malwa even now. The dabber is held by the knob and its convex base is held against the inner surface of the pot under construction. The outer surface is lightly struck by another wooden implement against the dabber inside. This simultaneous double process gives the necessary curves to the pot.

The following are illustrated.

Fig. 205 No. 1 An intact dabber made of charnokite, convex round base to suit the inner concavity of a pot. No. 7648a, NVS, A, 10a, Period III.

No. 2 Complete specimen, similar to above but of trap, coarse rough surfaces. No. 7648, NVS, H, 3. Period V.

Decorated Stone Pieces

Seven decorated fragments were found. The material (in order of descending abundance) of these is either marble, red sandstone or soft slatestone.

Save one, all the others belong to Period V. A singular piece comes from the levels of Period VI.

Some of the pieces deserve notice for the elaborate and measured carvings. It is certain that the craftsmen had a good control over their tools as the low and high relief and tender linear incisions show.

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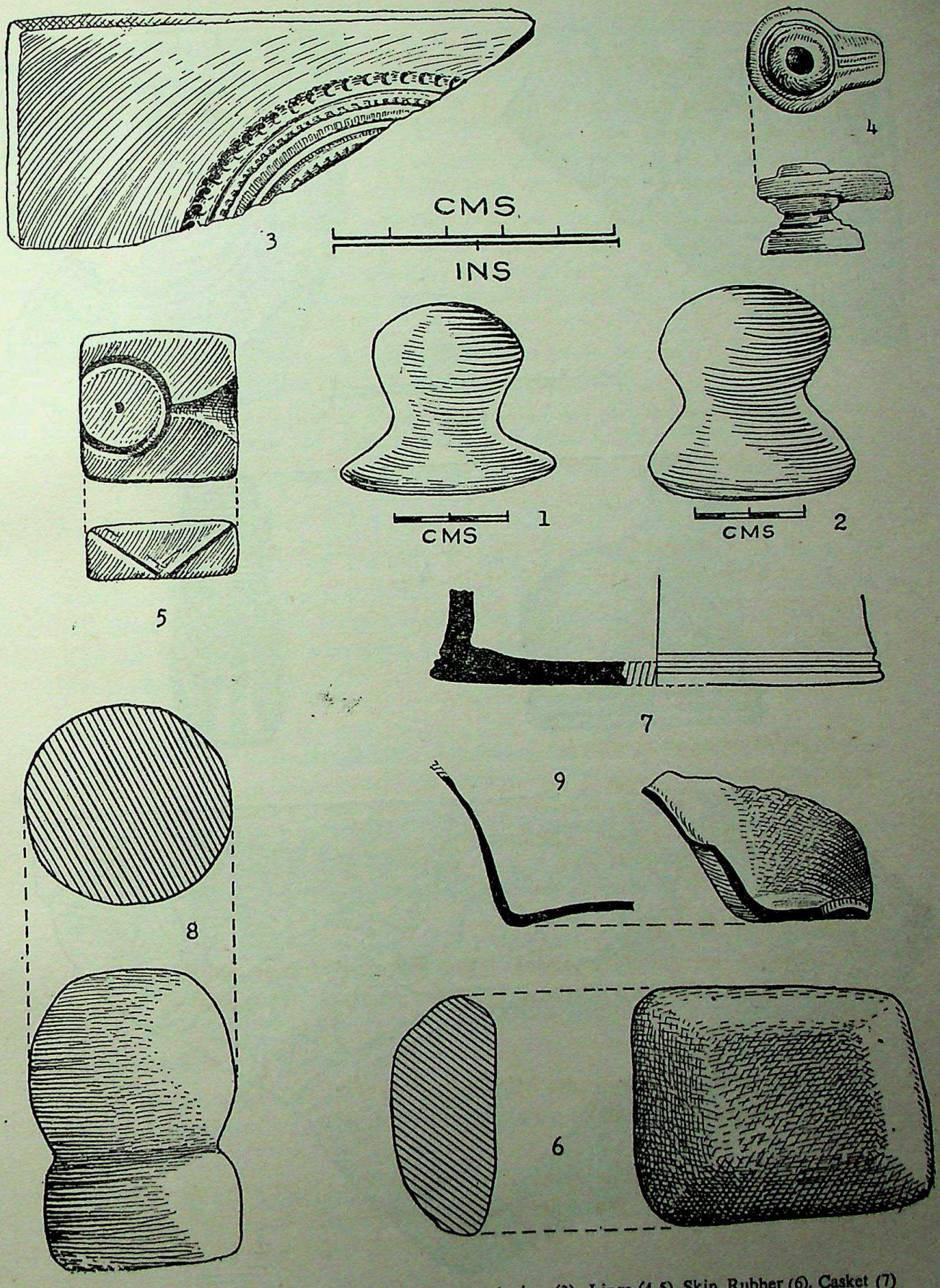

Fig. 205: Stone Objects [1/1]. Dabbers (1-2), Decorated piece (3), Linga (4-5), Skin Rubber (6), Casket (7) Dabber (8), Bowl (9). (See pp. 490, 493-494)

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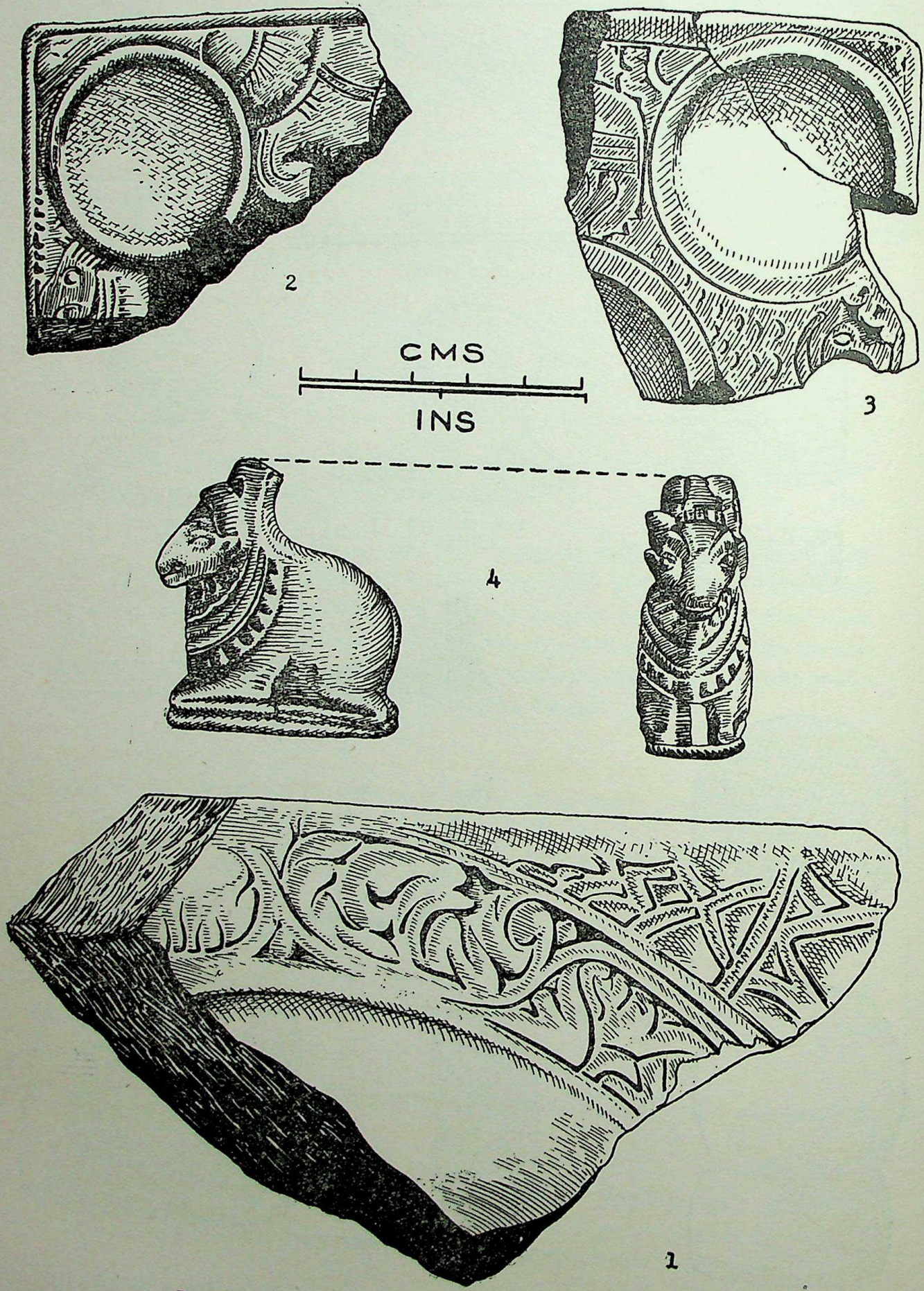

Fig. 206: Stone Objects, Decorated pieces (1-3); Nandi (4). (See p. 493)

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These might have been used as decorative slabs or tiles.

Fig. 206 No. 1 Fragment of a marble piece with a floral design on the periphery of an empty circle. No. 1235, NVS, B, 2, Period V.

No. 2 Fragment of probably a square or rectangular piece of yellowish stone, design consisting of a circle the edge of which is in relief; flanking the circle in the right hand top is probably a floral pattern and a *matsya*; in the left hand bottom is probably another *matsya*. No. 4021, NVS, F, 3, Period V.

No. 3 Fragment, red sandstone, design as on No. 4021 above, but incised shallow. No. 853, NVS, I, 1. Period VI.

Fig. 205 No. 3 Fragment of a rectangular slate stone piece bearing concentric circles with dots, band and squares in relief. No. 1831, NVS, B, 4. Period V.

The unillustrated specimens also belong to Period V and are very fragmentary.

Linga and Nandi

The top layers of Periods V and VI yielded several objects of worship like a big conch, cymbals, stone miniature *nandis* and stone *lingas*. All these indicate the religious affinities of the people residing the area. Though the evidence is meagre, the unfinished specimen shows that *lingas* were made locally.

Linga

Fig. 205 No. 4 A small *linga* made of slatestone, flat circular pedestal base, the top has a shallow perforation to place the *linga*-stone in it. Diameter 19 mm., length 25 mm. No. 352, NVS, I, 1. Period VI.

No. 5 A square piece of slate-stone with one face having incised circle and a channel. The diameter of the circle is the same as that of the specimen above, unfinished specimen. No. 2670, NVS, H, 3, Period V.

Nandi

Fig. 206 No. 4 A complete specimen of a *Nandi* made of red sandstone, flat rectangular base, crude workmanship, wearing a necklace of circular bells(?), mouth shown by a horizontal incision, one short horn extant, hump shown close to the head. No. 883, NVS, C, 2, Period V.

Skin-Rubber

Besides the elaborate skin-rubbers made in terracotta, a rectangular piece of carnelian was found. Its undersurface is flat and smoothed possibly due to use.

Fig. 205 No. 6 A rectangular piece with a flat broad base, truncated top and sloping sides. Length 55 mm. breadth 43 mm. thickness 18 mm. No. 5399, NVS, E, 7. Period IV.

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Casket

A single specimen of probably a casket was found in a layer of Period V. It is made of blackish soap-stone and the interior is smooth, fresh and polished. The exterior is rough, apparently due to use. It is likely that such containers or caskets were used for keeping unguents etc.

Fig. 205 No. 7 Fragment of a casket with a flat base, sides slightly concave, exterior of base having a pair of incised grooves. No. 1571, NVS, C, 3. Period V.

Pounder or Dabber

A knobbed piece of greenish jasper is very interesting. It is virtually a cylinder with a groove near the base. The knob is biconvex with a flat top. The base is ovally, smaller and flat.

It is likely that it was used as a pounder. It, however, shows no signs of use. It might also have been used as a dabber in the making of smaller pots.

This polished piece of jasper comes from the layer of Period IV, which yielded the other polished dabbers of trap. The jasper specimen might have been made from the locally available material.

Fig. 205 No. 8 A complete dabber or pounder of green jasper, flat base, bulbous head. Height 51, width of base 34, and 29 mm. No. 5337, NVS, E, 9. Period IV.

Bowl

Fig. 205 No. 9 Fragment of a bowl of chalcedony with flared sides and concave base. No. 616, NVS, D, 2. Period V.

Other objects

These include small fragmentary decorated stone pieces, a cylindrical piece of slatestone and a big piece of bloodstone with one side rounded and smoothed due to use (possibly as pounder), and a rectangular piece of slatestone with two complete and one incomplete perforations. None of these is illustrated.

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CHALCOLITHIC AND NEOLITHIC SITES OF INDIA

● CHALCOLITHIC SITES
▲ NEOLITHIC SITES (POLISHED AXES)
ANCIENT TRADE ROUTE
0 47 94 141 MILES

R. INDUS · ZHELUM · R. RAVI · R. BEAS · R. SUTLEJ · R. GHAGGAR · SIWALIK HILLS · R. JUMNA · R. GANGES · R. RAPTI · R. GOGRA · R. SAI · R. GOMATI · R. BRAHMAPUTRA · R. CHAMBAL · BETWA · R. KEN · R. SON · R. PADMA · R. RIHAND · R. SABARMATI · R. MAHI · R. ORSANG · R. NARBADA · TAPI R. · BRAHMANI R. · R. TEL · R. MAHANADI · DUDNA R. · PRAVARA · R. GODAVARI · R. BHIMA · R. MUSI · R. MUNI · R. KRISHNA · GHATAPRABHA · MALAPRABHA · R. TUNGABHADRA · GUNDLAKAMMA · R. PENNAR · CHITRAVATI R. · PAPAGHNI · R. CAUVERY · R. PONNAIYAR · R. BHAVANI · VELLAR R. · PONNANI · R. VAIGAI · TAMBRAPARNI

I
II
III
IV
V
VI
VII
VIII
IX
X
XI

CHALCOLITHIC SITES

I INDUS SYSTEM.
1 MOHENJODARO. 2 HARAPPA. 3 RUPAR. 4 SURATGARH. 5 HANUMANGARH 6 CHANHUDARO. 7 JHUKAR. 8 AMRI. 9 JHANGAR.

II GANGES SYSTEM.
1 KAUSAMBI. 2 ALAMGIRPUR.

III BRAHMPUTRA SYSTEM.

IV MAHANADI SYSTEM.

V CHAMBAL SYSTEM.
1 PSEVA. 2 NAGDA. 3 PARAMAR-KHERI. 4 TUNGNI. 5 METWA. 6 TAKRAODA. 7 BHILSURI. 8 MAORI. 9 GHATA-BILOD. 10 BETWA. 11 BILAWALI. 12 ASHTA.

V RAJPUTANA – SAURASHTRA.
1 RANGPUR. 2 AHAR. 3 PRABHAS PATAN 4 LAKHABAWAL. 5 LOTHAL. 6 PITHADIA. 7 ROJDI. 8 ADKOT

VII NARBADA SYSTEM.
1 NAVDA TOLI. 2 MAHESHWAR. 3 BHAGATRAV. 4 TELOD. 5 MEHGAM. 6 HASANPUR.

VIII TAPI SYSTEM.
1 PRAKASHE. 2 BAHAL.

IX GODAVARI-PRAVARA SYSTEM.
1 JORWE. 2 NASIK. 3 KOPARGAON. 4 NEVASA. 5 DAIMABAD.

X BHIMA SYSTEM.
1 KOREGAON. 2 CHANDOLI. 3 UMBRAJ. 4 CHANEGAON 5 ANACHI. 6 HINGNI 7 NAGARHALLI

XI KARNATAK.
1 BRAHMGIRI. 2 PIKLIHAL 3 MASKI

Fig. 206a. Map showing the Chalcolithic and Neolithic sites in relation to the ancient Trade routes.

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XVI

CONTACTS AND CORRELATIONS

A sequence of five to six cultures taking us from modern times right upto the dawn of definite human existence at Nevasa may be considered remarkable. However, it may be mentioned, that this was indicated by our previous work at Nasik and Maheshwar, though at both these sites the evidence was scattered. In future, other sites will also produce such a sequence. One of these is Mandasor[1]—the ancient Daśapura—in Central India, where there are stratified deposits of Early and Middle Palaeolithic Cultures, and a lofty mound of the historical period, which at the base has yielded traces of painted pottery of the Chalcolithic period. Bahal and Prakashe in the Girna-Tapi Valley have similar potentiality. Recently Nagarjunikonda in the Kurnool District has also shown such a promise.[2] Thus with further explorations, many more sites like Nevasa are bound to be discovered.

With regard to the details of each cultural stage, beginning with the Early Palaeolithic at Nevasa, cleavers and chopping tools of a varied type seem to precede the hand-axes. Among the former the cleaver with a splayed or flaring edge is so far absent, but it occurred at Nasik, though the technique of manufacturing is identical. A slightly later occurrence of hand-axes was also observed by SOVANI[3] at Nasik. These again, like those of Nevasa, are of advanced type. So, if at many other sites in the Deccan where tools are, as a rule, made of dolerite, this differential sequence is found within the Early Palaeolithic, it may gain in significance.

Of the rest, the hammer-stone or chopping tools of three or four types—all having a definite striking point or points, seem to be new. Such types have not been noticed by me in our collections from Gujarat, Central India including the Narmada, Rajputana, Karnatak, Andhra and Orissa.

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1. See SANKALIA, H. D., *Pre-and Proto-History of Malwa* (An Introduction), Poona, 1958; *I.A.R.*, 56-57, p. 11
2. *I.A.R.*, 57-58, pp. 3-5
3. *Ibid*, 56-57, p. 11.

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Exactly similar tools seem to be also absent from other recent collections,[4] though a chopping tool with a jagged sinuous edge around is often referred to.[5] It is possible that this particular tool type has something to do with the material—blocks from dolerite dykes—from which these are made. For whenever tools are chipped from pebbles such tools do not occur.[6]

The Middle Palaeolithic culture, of an essentially different facies consisting of scrapers and points on flakes, some of a definite Levallois character, also does not stand alone. Besides the Pravara-Godavari Valley, it has been found stratified in the Narmada[7] and other rivers of Central India, where it is found loose. It is thus widely distributed,[8] almost as extensively as the earlier one. Though superficially there seems to be a great similarity between the tool types from widely different regions, as Nevasa and Mayurbhanj, Saurashtra, Kurnool and Mandasor, the raw material often differs. In Andhra,[9] Karnatak,[10] Orissa,[11] it is generally brownish jaspery chert, chalcedony and agate being rare; in the Rewa[12] (former Bundelkhand) it is chert; in Rajputana[13] flint and jasper and elsewhere, as at Nevasa, multicoloured jasper, carnelian and agate and occasionally smoky chalcedony. But not only is there a difference in the material, some difference in the tool type is also indicated. The collection of DEO and

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4. KRISHNASWAMY, V. D., and SOUNDAR RAJAN, "The Lithic Tool-Industries of the Singarauli Basin, District Mirzapur", *Ancient India*, No. 7 (1951), pp. 40-59.
5. *Ibid.* p. 50 (No. 13). How far these—at Mirzapur, Nevasa and in Gujarat—represent the Early Sohanian tradition requires a fresh appraisal. I regard them as a part of Hand-axe complex.
6. Palaeoliths have also been reported from the Tapi valley in N. Khandesh, but the details regarding types are not yet fully known. *I.A.R.* 57-58, p.24; 58-59, p.24. Those reported from the Chambal, Betwa, and the tributaries of the Narmada are usually of quartzite, and the very large collection by KHATRI had none of this type of tool. *I.A.R.*, 57-58, p.26; 58-59, pp. 26-27.
7. For a small collection from Hoshangabad see MALIK, S. C. "Recent Explorations in Hoshangabad", *Journal, M.S.U., Baroda*, Vol. VIII (1959), pp.27-39.
8. For tools from Bombay and Satara, see MALIK, S. C., *Stone Age Industries of the Bombay and Satara Districts, M.S.U. Archaeological Series*, No. 4 (Baroda 1959).
9. Prof. ISAAC's Collection, Deccan College, see also *I.A.R.*, 58-59, p.10.
10. Deccan College Collections.
11. Shri MOHAPATRA'S Collection, Deccan College; see also *I.A.R.*, 57-58, p.41 and 58-59, p.36.
12. *I.A.R.* 58-59, p.2 (from the River Kopra). Recently these have been found on the Bina, near Korwai and at Sagar.
13. Shri MISRA'S Collection, Deccan College, *I.A.R.* 58-59, p.42.

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SHAIKH (ANSARI) from the Tapi valley[14] has unusually long and blade-like flakes. JOSHI also thinks that his Rewa group is slightly different,[15] having more of the blade element. Provision has therefore to be made for regional variation and even probable evolution into a blade culture of an Upper Palaeolithic type.

The next well documented culture at Nevasa is the Chalcolithic. So far we have not discerned any sub-phase in it, though it is possible that with further, more extensive excavations, some structural phases might be revealed. Two of its main features—pottery and blade industry—are identical with those found at Jorwe. In fact the blades etc. are typologically so alike that for the present purpose, this latter feature may as well be left out of discussion.

With regard to the pottery, including the burial urns and storage jars with typical finger-tip decoration, it appears that we may group the pottery fabrics, types and decorations into :—

(i) Jorwe-Nevasa or Godavari-Pravara Valley Chalcolithic pottery.

(ii) Bahal or Girna Valley Chalcolithic pottery.

(iii) Prakashe or Tapi Valley Chalcolithic pottery.

(iv) Navdatoli-Maheshwar or Narmada Valley Chalcolithic pottery.

(v) Nagda or Chambal Valley Chalcolithic pottery.

(vi) Chandoli-Koregaon or Bhima Valley Chalcolithic pottery.

(vii) Maski, Piklihal, and Brahmagiri Chalcolithic pottery.

(viii) Nagarjunikonda or Krishna Valley Chalcolithic pottery.

The Jorwe-Nevasa primarily contains small and medium size pots with flaring high rims and long tubular spouts, and carinated bowls with essentially geometric decorations. Dishes and pedestalled bowls are as a rule absent. The fabric is generally thin, fine, with or without wash, but not polished or glossy. Bowls with realistic animal designs might be regarded

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14. *I.A.R.* 56-57, p.11.
15. Based on a personal discussion at Poona, and inspection by Dr. K. D. BANERJEE, at Nagpur.

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as rare and probably show other influences, though now these also occur at Daimabad and at Pimpaldar in the Nasik District.[16]

Such pottery is found in a number of sites in the Godavari-Pravara Valley. And it appeared before the excavations at Daimabad that the moment we go farther away to the north or to the south, more of other elements come in. Thus, as already pointed out before, Bahal and Prakashe and farther away Navdatoli have less and less of this stuff, and that too in the upper layers. To this generalized picture, Daimabad on the Pravara has proved an exception. Here typical Jorwe ware occurs in profusion and as the principal ware in Period III. " Malwa "-like pottery with paintings in black on a reddish surface with a stray sherd of channel-spout occurs in Period II, while in Period I we have thick, coarse grey ware, together with a white-slipped ware. The former suggests connections with Brahmagiri I, the latter with the earliest phase of Navdatoli. Unfortunately no site is excavated to the south of the main valley. So we do not know the exact stratigraphical relation between the Jorwe and other wares, for instance at Chandoli where surface observations have yielded some trans-Godavari types and fabrics as well. But Maski, Sangankallu, Brahmagiri and a number of sites on the Bhima and its tributaries in the Bijapur District[17] have yielded sherds of this ware, though, of course, not everywhere in its pure fabric. The range of types is hitherto unknown. (At a number of places besides Brahmagiri, it is reported that thick sherds of a blackish ware (or the urns ?) and at times even polished axes were also noticed.)[18] Since these are associated in two stratified excavations, *viz.* Nevasa and Daimabad in the Pravara Valley and Brahmagiri, it may be concluded that elsewhere in Bahal in the Khandesh District, Chandoli in the Poona District, Karad etc. in the Satara District and several sites in the Bijapur District, that is the region encompassing present eastern Maharashtra (Desh), Karnatak-Mysore,[19] and probably Western Andhra was the province in which the Jorwe-Nevasa Chalcolithic Culture and its variants flourished. Whether the centre of this culture was in the Godavari-

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16. *I.A.R.*, 57-58, p. 66.
17. *I.A.R.*, 57-58, p.39; 58-59, p.32.
18. *Ibid.*, p.32.
19. Whether it extended further south into the Coimbatore District of Madras, as indicated by the reported finds at Sircarsamkkulam (*I.A.R.*, 57-58, p.38, pl. XLVIII, 1-2) is doubtful.

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Pravara Valley (where only its typical pottery forms are best known) or it lay southwards cannot be determined at present.

It is also possible that a purely Neolithic Culture characterized by polished hand-axes, burial urns, and hand-made vessels with or without spouts existed in Andhra and Karnatak. This is now supported by the excavations at Piklihal, Utnoor and T. Narasipur.[20] The last site in the Mysore District of which a brief report is available, yielded in Period I four different pottery wares: (i) burnished grey ware, (ii) orange-red and brown with curved lines in violet, (iii) thin burnished grey with the tip in red ochre, and (iv) channel-spouted in coarse grey with polished axes and pounders. C-14 dates of Piklihal and Utnoor[21] Culture go to about 2,000 B.C. On this Neolithic Culture might have impinged a people using microlithic blades, a little bit of copper and highly specialized pottery. And what we are witnessing may be a fusion of the two or more cultures in Maharashtra and Karnatak.

Definite light on this problem can only be cast when one or two sites are excavated and that too sufficiently extensively in Andhra and Karnatak.

Before discussing other features of this culture, the special characteristic of its pottery, *viz.* a high, almost vertical, tubular spout, which is painted with black band at the mouth and/or at the junction of the spout with the body of the vessel, and at times along the length of the spout, may be briefly noted. No exact parallel can be cited in the Harappan or the post-Harappan, or the Baluchistan sites. Such a spout is even absent in the Sialk-Hissar pottery to which great likeness is found in the Chalcolithic pottery of Navdatoli. However, one type of vessel at Tepe Giyan[22] has such a spout. So also the pottery of Al-Ubaid[23] period, which is believed to have been derived from Iran, bears such long tubular spouts, though the vessels otherwise are quite dissimilar in having a loop handle and a vertical neck. Thus some vague likeness with the Iranian pottery is there, as the late Professor CHILDE said, on seeing the vessels in our museum at the

20. *Op. cit.* 58-59, p.33.
21. District Mahbubnagar. The exact figures are 4120±150. B.P. *I.A.R.*, 58-59, p.11.
22. SCHMIDT, Erich F., *Excavations at Tepe Hissar*, Damghan (Philadelphia, 1937), pl. XLI, No. H 4296.
23. WOOLLEY, Sir Leonard, *Ur Excavations*, Vol. IV, *The Early Periods*, 1956, pp. 91, 95, 97.

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Deccan College. This view may become clear or be given up by further work.

It is also likely that these spouted vessels have developed from the indigenous Neolithic, of which we have now a few examples from Nagarjunikonda. These are of burnished grey-ware and have small spouts. One of the pots has a slightly bulging body, narrow but not angular neck and flaring rim. So such a type might have served as a proto-type, provided the Neolithic everywhere in this area is earlier than the Pravara Chalcolithic.[24]

The other feature of this culture—partial burial, or burial after maceration of the skeletons of infants and children and of adults right under the floor of the habitations at a very small depth—was also observed at the nearby site of Daimabad.[25] Here, as at Nevasa, even three urns were used to accommodate the remains of a grown-up child.

Surface observations elsewhere further indicate that south of the Narmada in the Tapi Valley in West Khandesh,[26] burial was practised during Chalcolithic times. But whether it was within the habitation area or in a separate cemetery cannot be ascertained without excavation. At Tekawada, opposite Bahal on the Girna, if the burials belong to the Chalcolithic, then they were certainly without the habitation area.

Thus the Pravara Chalcolithic practice of burying children just underneath the houses may seem unique, though primitive tribes in Bihar, such as Ho and the Uras bury the dead in their compound or *Arigan*.[27] For elsewhere—Harappa, Lothal—the burials were slightly away from the main habitation, in a regular cemetery. With regard to other features, upper levels of Cemetery H (which is not Harappan) had yielded 135 fractional burials. and babies were found interred in a contracted position in urns.[28]

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24. The occurrence of the channel-spouts at Daimabad, T. Narsipur, in Mysore, and much earlier discovered by FOOTE, [*Indian Prehistoric and Protohistoric Antiquities* (Madras 1916) pl. 26' p. 115] at Patpad, Kurnool District, so far suggests a northern origin and diffusion into the south. But if a string of sites in the south yields such vessels from the Neolithic levels, then the question will have to be re-considered.
25. *I.A.R.*, 58-59, p.18.
26. *I.A.R.*, 58-59, p.19.
27. SAHU, Ramdas, *Tribes of India*, Part II, Delhi 1951, p.46.
28. VATS, Madho Sarup, *Excavations at Harappa*, Vol. I, p.217 ff.

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The evidence from Brahmagiri is not clear.[29] Here 18 urn burials all belonging to I B period were found. They contained child skeletons, "whose skeletons had been tightly folded to fit into the restricted space." In some cases, the body had not been buried intact, but the evidence for deliberate fragmentation burial is not beyond doubt. If it is proved to be similar or identical to that of the Pravara then it affords one more point of affinity between the two cultures.

However, outside India, at a number of Chalcolithic and Bronze Age sites in Western Asia, Egypt, Crete and elsewhere, the practice of burying the dead, specially children, in houses was common. This evidence is here cited, *without implying any contacts*. For unless the intermediate links between the two far-flung regions are available, what we are witnessing may mean nothing but parallel development.

A number of (unusual) burial practices were disclosed at Tepe Gawra. During Periods XIV-XII a majority of infants were buried in houses in double-urns, the joints of which were sealed by clay plaster. It is said that this method parallelled the Late Kassite burials in Babylon.[30] But instances have been noted where the infants were enclosed in shell of mud plaster, and others were often fractional with some parts missing.[31] Such fractional burials were common at Arpachiyah.[32] In Nineveh-3 also the infants were put in urns which were grey burnished, and had a wide mouth and out-turned rim.

At Hassuna,[33] right from the earliest period, burials were noticed. In the lowest structure an adult skeleton was found in a contracted posture

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29. From the description of Cutting Br. 17, it appears at least some burials were found under house floors, which as at Nevasa and Navdatoli, were made of lime. *A.I.*, No. 4 (1947), pp.203-4.
30. PERKINS, A. L., *The Comparative Archaeology of Early Mesopotamia*, (*CAEM*), pp.71-72.
31. *Ibid.*, p.56. The colour and shape of the urns recall those from Nevasa-Brahmagiri, but this may mean nothing, for inserting a skeleton, or part thereof, the urns had to be wide-mouthed.
32. This had suggested to MALLOWAN some connection with India, but PERKINS (*Ibid.* p.72) does not think much about it. JAMES (*Prehistoric Religion*, London 1957, p.46) notes, that such mode of interment....might have been introduced from Iran.
33. LLOYD, Seton and SAFAR, Fuad, *Journal of Near Eastern Studies*, Vol. IV (1945), p.267, and pl. iii, 1,2,3.

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between two hearths in association with a storage jar and a stone hoe. In Level I B, infants[34] were buried in coarse incised, and painted and incised jars, whereas in Level I C was a burial in the fully flexed position with the head to the north. At Tell Halaf,[35] the body of a new-born child was found inside a pot, but the evidence is not clear.

Not much of the burial practices is known from Southern Mesopotamia or Sumer. Barring Ur, where an extensive cemetery was uncovered by WOOLLEY, at Kish, the practice seems to have been to bury the dead in a wicker or pottery coffin or in two large pottery jars with their open ends together, often right beneath the house, under the pavement of one of the rooms.[36]

In Egypt, right from the early Neolithic times, the practice was to bury the dead in graves outside the settlement. To this general rule, Merimde on the Western marshes of the Delta, west of the Rosetta branch of the Nile and the Fayum lake-side settlement provide an exception. At the former site, the dead were in trench or pot graves in the flexed position among or within the huts of the settlement near the fireplace, but without any furniture.[37]

From nearer home, Iran and Baluchistan, the evidence is still much less. In the former,[38] the burials, as a whole, seem to have been in regular cemeteries, where some might be fractional. No large village or city site is yet excavated in the latter. The evidence from the Nal cemetery is,[39] however, interesting, recalling a few features of Nevasa. The mode of burial was largely fractional, and in some vessels a few bones, some even of animals, were found mixed with earth.

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34. SAFAR says "a dozen infant burials in pottery jars from Level I B upward". However these urns had a neck and are quite different from those of Nevasa.
35. JAMES, *op.cit.*, p.45.
36. WOOLLEY, *The Sumerians*, 1929, p.36.
37. JAMES, *op.cit.* p.37, and for Fayum see Caton THOMPSON, and E. W. GARDNER, *The Desert Fayum*, (London), p.90.
38. JAMES, *op.cit.*, p.50 for Susa, and GHIRSHMAN, *Fouilles de Sialk*, Vo. I-II, and SCHMIDT, *Excavation at Tepe Hissar.*
39. HARGREAVES, H., *Excavations in Baluchistan, MASI.*, No. 35 (1929), p.17.

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CONTACTS AND CORRELATIONS

From the brief survey, we may not draw any inferences about the connection this way or that between the various Neolithic and Chalcolithic cultures, some of which are at least 2,000 years earlier than those at Nevasa, though it may be legitimate to conclude with Professor JAMES[40] that " throughout the Ancient East.....despite marked differences in climate and economic conditions, there was a uniformity of procedure in the burial of the dead, and in the funeral ritual and equipment ". It would be interesting to see how far further work confirms this conclusion.

The exact relationship of the polished axes which also seem to form a part of this culture, cannot be defined, though within recent years, their distribution is widening within the Deccan and Peninsular India (See Map p. 494a). South of the Narmada in the districts of Khandesh,[41] Ahmadnagar,[42] Nasik (?), Poona,[43] Sholapur (?), Satara (?), Bijapur,[44] Dharwad,[45] Chitaldrug,[46] Mysore,[47] Raichur[48] (and perhaps Bellary and Kurnool) they are closely associated with microlithic blades and painted pottery. But their occurrence farther south at Sircarsamkkulam,[49] District Coimbatore, and particularly Kollanpatrai[50] near Kodangipatti, District Madura, without painted pottery and microliths might only imply that these are purely Neolithic sites. Whereas further discoveries in West Bengal[51] and now two districts of Orissa[52]—Mayurbhanj and Dhenkanal—should strengthen WHEELER's hypothesis[53] of an Eastern origin—preferably Central China—of the Polished Axe Culture.

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40. JAMES, *op.cit.*, p.57.
41. *I.A.R.*, 56-57, p.17, pl.XXB.B (though found in middle layers of Period III at Bahal); 57-58, p.24, pl.XXV.B. (Some doubtful) 58-59, p.25, pl.XXVIII A.
42. *Ibid.*, 58-59, p. 15
43. *Ibid.*, 57-58, p.65.
44. *Ibid.*, 57-58, p.39, pl.XXVB.
45. *Ibid.*, 58-59, p.32.
46. *A.I.*, No. 4, 1947, p.(6a) *I.A.R.*, 58-59, p.33.
47. *I.A.R.* 58-59, p.32.
48. No polished axe has so far been found here in the Chalcolithic context.
49. *I.A.R.*, 57-58, p.38, pl.XLVIII, 1-2.
50. *Ibid.*, p.38, pl.XLVIII, 3-4.
51. *Ibid.*, 57-58, p.69.
52. *Ibid.*, 58-59, p.36, pl.XLIX, A,B,C.
53. WHEELER, Sir Mortimer, *Early India and Pakistan*, (London, 1959) p.89; see also KRISHNASWAMI, V. D., *Proceedings of the Indian Science Congress*, Part II Presidential Addresses, Delhi-1959.

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However, if these axes also turn up in Central India and Rajputana, as a stray one was found in 1957-58 at Navdatoli, and another at Maheshwar in the last century in a Chalcolithic context, then we may have to revise our views. For in addition to painted pottery, particularly goblets and channel-spouted bowls, and the specialized blade industry, which SUBBARAO and I think came from the West, ALLCHIN suggests, though without giving reasons, that even the polished axe or the neolithic stone-working techniques were ultimately derived from the Middle East and Iran.[54] WHEELER, of course, has rejected the latter view summarily, and in support of his view has added that China might have got the polished axe *via* Central Asia, as it later traded with the West by the Silk Route.

But the story of India's indebtedness to Iran and the Mediterranean is not over. The work at Arikamedu and Chandravalli showed how the coastal towns, particularly in the south received the Arretine ware, amphorae and Roman gold coins. Nevasa, though far in the interior, imported the Mediterranean wine in the amphorae,[55] and if not the true Arretine ware, imitation or very close copies of it and the Megarian type bowl.[56] In addition, it has supplied two characteristic objects. The first is a copper or bronze dish with an omphalos.[57] So far it was noticed at Taxila only. Here, at Sirkap[58] it occurs in stone, silver and copper or bronze.

The second is a unique kind of rotary quern.[59] Its affinities with extra-Indian types from Western Europe have already been discussed. Attention at that time was also drawn to its occurrence elsewhere in India.

There is one more thing—iron. WHEELER in his latest book has suggested that it was introduced by the Persians in about the 6th-5th century B.C. and then it spread to the south.[60] The evidence from Nasik,

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54. *Bulletin, School of Oriental and African Studies*, Vol. XIX, (1957), p.326.
55. See above, pp. 314.
56. See above, pp. 310.
57. See above, pp. 420.
58. MARSHALL, *Taxila*, Vol. III, pl.188, no. 10 (silver), pl.143, no.40 (stone), pl.175, no 289 (copper).
59. See above, pp. 477.
60. WHEELER, *op.cit.*, pp.24 and 171.

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Nevasa, Bahal, Prakashe and Maheshwar does not take us beyond the 3rd century B.C., and the earliest layers of Ujjain might not go beyond (*c.*500 B.C.), the date suggested by WHEELER.

If, therefore, iron is comparatively late in India, then the various tools, weapons and utensils made of iron might owe their origin to foreign sources, particularly Persian and Graeco-Roman. It was pointed out long ago by CHILDE[61] that the various implements—such as the tongs, tweezers etc.—seem to have been first invented by the Greeks about the 6th century B.C., as they are found depicted on the black figured vases.

So far the largest number and varied types of household objects of iron have been recovered from the excavations at Sirkap, Taxila. This was an " Indo-Greek " city, and it would not be surprising if some (most) of these objects are Graeco-Roman and Persian. While listing these for the preparation of the History of Material Culture in India, I was particularly struck by the dish with omphalos and iron frying shovels.[62] Now two or three of these have also turned up at Nevasa in Period V, associated with Roman coins, bullae and Red Polished ware. It is, therefore, not impossible that these few objects of iron might be ultimately derived from the West, though as yet, again, we cannot prove this by a distribution map, for want of adequate and reliable data.[63]

Within India, Nevasa had naturally the closest contact with other contemporary sites in the Deccan, such as Kondapur, Ter and Nagarjunikonda in the east. From here came, either by trade or otherwise, the kaolin boyhead[64] of which so far Nevasa is the westernmost limit. Though, if we also include the kaolin and terracotta nude (?) seated goddess, then the limit will have to be extended up to Kolhapur, where in 1945-46 this figure was found first.[65]

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61. *Journal of the Royal Anthropological Institute* (*London*) Vol. LXXIV, Pts. 1 and 11, 1944, p.20.
62. MARSHALL, *op.cit.*, Vol. III (Plates) pl.163, nos. 39-40. PETRIE, W.M., *Tools and Weapons*, p.57 and pl.LXXIII-IV and pl.LXXIII-IV cites only a few from the late Bronze Age Cyprus and Roman time.
63. In fact, MARSHALL has already expressed the view that frying pans (and other) types of domestic utensils of iron which were known throughout the Greek and Roman world from 300 B.C. "were doubtless imported into India by the Parthians". MARSHALL, *op.cit.*, Vol. II, p.592.
64. See above, pp. 407-408.
65. SANKALIA, H. D., and DIKSHIT M.G., *Excavations at Brahmapuri* (*Kolhapur* 1945-46), (Poona 1952). pl.XXI.

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FROM HISTORY TO PRE-HISTORY AT NEVASA

APPENDIX 1

THE URN BURIALS*

(with two tables and thirty photos)

by

Prof. Dr. Mrs. Sophie EHRHARDT

In the excavations at Ladmod near Nevasa some human skeletons and bone material were found in the years 1954-56, at a depth of 6-8 metres.[1] With one exception all the bones were in urns. The one earth-burial lay direct on the floor with a surface which was smoothed out with lime. According to the report of SANKALIA[2], the site at Ladmod showed an unbroken series of layers from many cultures. The fixation of the period of these cultures has been done with the help of the radiocarbon method. The result for one sample from layer 11 containing the urns gives the absolute age of 2545±115 and 3106±122 years respectively. These numbers show an interval of time of more than 500 years; *i.e.* from about 586 to 1147 B.C.[3] This cultural layer, the Chalcolithic, can be compared on the one hand with the Stone Axe Culture of Brahmagiri near Mysore[4] and on the other hand with the microlithic blade industry of Navdatoli in Central India.[5]

The urns were found directly under the floor of the houses, a burial system which has not completely disappeared in India even today.[6] Nearly all the urns were broken into many pieces and pressed in and this has naturally affected the contents of the urns. The bones in the urns were not only broken into pieces, but also thrust against each other (*Fig. 207, No. 6* Trench A, burial IV) and encrusted with soil (bone breccia of Trench F, burial 15; see *Fig. 207, No. 10*). In most of the cases, it must be a partial burial (after burning of the dead body?). In the description of the Nevasa finds, in the *Indian Archaeology* 1955, p. 7 it is stated that "After partial cremation or exposure of the body, the bones were placed in a hand-made urn". We do not know what has become of the remaining bones. I shall refer again to the method of disposal later.

The bones belong to infants and little children; one skeleton could be identified as that of an older child (Trench H, burial 19), another as one of near adult person (Trench H, burial 10). Individual bones belonging to adults or children have got into the urns by accident. Often one found animal bones and occasionally gifts like clay bowls, pearls (carnelian beads) or a small microlithic knife. In all, 30 burials in urns were found and also an earth-burial (Trench Z, burial 14). Usually two urns were pointing towards each other; in one case there was one urn (Trench F, burial 23); in two cases there were three urns (Trench F, burial 26 and Trench H, burial 10). However, all urns did not contain bones; some were quite empty; *i.e.* they contained only earth, but no bones. The bones were found in the double urns in very different positions. Any particular arrangement could not be observed; in some cases, however, the head, breast and the upper extremities were found in the urn pointing towards

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* DR. EHRHARDT has followed a slightly different method of citing the references which is common on the Continent. This has not been disturbed.

1. *Indian Archaeology* 1955-56, Fig. 2.
2. SANKALIA, H.D., 1958: "The story of man," in *The Illustrated Weekly of India*. Nov. 23.
3. According to the account of the examinations of the University of Pennsylvania dated the 30th September 1958. The first date should be omitted from discussion, as the tin containing the sample was damaged in transit. (H.D.S.)
4. WHEELER, R.E.M., 1947-48: "Brahmagiri and Chandravalli 1947", *Ancient India*, No. 4, p. 181-310.
5. SANKALIA, H.D., SUBBARAO, B. and DEO, S.B., 1958: *The Excavations at Maheshwar and Navdatoli*. The Deccan College Research Institute and the Maharaja Sayajirao University Publication No. 1. Poona-Baroda.
6. This is practised by some primitive or semiprimitive tribes of Khandesh and Bihar, but the custom does not exist among other communities (H.D.S.)

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the north, while the pelvic bones and the lower extremities were found in the urn pointing south (Trench F, burial 24 and 28; Trench H, burial 10 and 19; see *Fig. 207, I*). In most cases it was an individual burial. But in two cases the bones of two children were found in the urns, one child in each urn (burial II in Trench A) and in burial IV (Trench A) the children were together. Almost always the urn pointing north contained bones while the one pointing south was often empty.

I had to deal in my research with bones from 20 burials, out of which I could not be sure in four cases, that the bones were human bones. I have not worked upon the bones in burial 18 and 19 (Trench E, 14), 6,21,22,26 and 30 (Trench F). In all, the bones had belonged to at least 18 individuals, not counting the stray bones of adults which one occasionally found along with the children's skeletons and excluding the pieces of children's bones found along with the adult skeleton. Table I gives an overall idea of the bones in the urns which I have investigated, the number of individuals, the respective age and the gifts found with the skeletons (the animal bones found along with the skeletons are excluded).

TABLE I.

Summary of the human bones found in the urns

(The number of individuals, their age, the gifts found with them, but excluding animal bones)

Trench	Burial	Number	Age	Remarks
A	I	1	2—3 years	Many potsherds
	II	2	Infant? newly born child	3 small clay dishes
	III	2[1]	About 6 months Adult	"Some bones were charred"
	IV	2	About 1 year	—
E	21	1	About 1 year	—
F	5	1	Infant	—
	7	1	6 months to 1 year	3 pearls; (beads of carnelian) bones worked upon?
	8	2[1]	Infant or newly born child Bones of adult	—
	9	1	Newly born child?	—
	10	?	—	Human?
	15	?	—	Human?
	16	?	—	Human? Bones with burning signs
	17	?	—	Human? Bones with burning signs
	24	1	About 1 year	—
	25	1	About 1 year	—
	27	1	Infant	—
	28	1	6 months to 1 year	—
H	10	2[1]	About 20 years; child	—
	19 = 11A	2[1]	About 10 years; small child	Small wood pieces; one piece of charcoal; small microlithic knife
Z	14	1	About 6 years	Small pieces of charcoal; earth burial

1. In the cases the bones of adults or children respectively were found along with the others, sometimes only pieces of bones, I am of the view that these pieces got into the urn accidentally along with the earth. The same might also apply to the animal bones.

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The skulls had been partially assembled by Prof. Dr. Mrs. I. KARVE and I completed the work. However, owing to the brittleness of the material, corrections could not be undertaken. The condition of the bones was on the whole very bad.

DESCRIPTION OF SINGLE FINDS

Trench A, burial I.

Layer 10a; depth 2 ft. 8 ins. BD 5; urns two, 1 and 2[1]; date 8-2-55.

Parts of child's skeleton. The skull could be assembled quite well (*Fig. 207, 2*). There were individual pieces of the top of the skull and facial skull, lower jaw and some teeth. From the remaining skeleton there were pieces of ribs, vertebrae, the two sides of the pelvis, of one clavicula, of both femora and tibiae.

Age[2]: The roots of the incisors have not reached their full length, are open. The first permanent molars are still in the jaw-bone; probably 2-3 years.

Remarks: The form of the skull is longish oval (maximum length 157 mm, maximum breadth 116 mm, length-breadth index 73.9).

Animal bone pieces present; several potsherds present.

Trench A, burial II.

Layer 10a; depth 2 ft. 8 ins.; urns two, 1 and 2; date 9-2-55.

1. *Northern:* Pieces of child's skeleton. Bones very much pressed and forced against one another and incrusted hard with earth. There was among others one piece of frontal bone with one orbita, pieces of scapula, clavicula, ribs, pelvis and of some bones of extremities.

   Age: Infant?

   Gifts: 3 small earthernware bowls.

2. *Southern:* Many pieces of a child's skull and skeleton.

   Age: Newly born child(?); younger than the other skeleton (there are no teeth in the lower jaw).

   Remarks: There are skeletons of two children in one burial, one in each urn.

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1. In 1954-55 Burial Nos. I, II, III, IV.....
   Urn Nos. 1 northern, 2 southern
   1955-56 Burial Nos. 1, 2, 3, 4, 5.....
   Urn Nos. 1 northern, 2 southern

2. References for age determination of skeletons:

MARTIN, R., 1928: *Lehrbuch der Anthropologie.*

TANDLER, J., 1926: *Lehrbuch der systematischen Anatomie*; 1. Bd. Knochen—, Gelenk-und Muskellehre, published by Vogel.

MEYER, W., 1932: *Lehrbuch der normalen Histologie und Entwicklungsgeschichte des Menschen*, published by Lehmann, München.

VALOIS, H., 1937: "La durée de la vie chez l'homme fossile." *L'Anthropologie* 47,499-532.

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THE URN BURIALS

Trench A, burial III.

Layer 10a; depth 2 ft. 8 ins. BD5; urns 1 and 2; date 9-2-55.

1. *Northern:* Child's skeleton, strongly compressed and deformed (*Fig. 207 ,3*); pieces of ribs, vertebrae, both scapulae, pieces of pelvis and the upper and lower extremities.

   Age: Only the side incisors are breaking through in the lower jaw (*Fig. 207, 4*); child of about 6 months age.

2. *Southern:* A piece of an extremity of an adult.

   Remarks: Pieces of animal bones found. I noticed what has been found at the time of the excavation, "Some bones are charred". Distinct traces of burning are not seen on the bones.

Trench A, burial IV.

Layer 10a; depth 2 ft. 8 ins. BD5; urns 1 and 2; date 9-2-55.

Pieces of two skeletons of children; only one skull(?). The bones are considerably broken and partly bent. The frontal bone is baked with earth along with the os occipetal with one os petrosum and with a small animal bone and sticking together. In addition there are a right os parietal and other skull pieces. Other (*Fig. 207, 5, 6*). bones found were pieces of ribs, vertebrae, claviculae, two right and two left pelvic blades, two right and two left femora, two proximal ends of humerus and other pieces of upper and lower extremities and several phalanges.

Age: The sutura frontalis is still quite open. Small jaw pieces show that only the incisors had come out. Both skeletons were of about the same age (this is confirmed by the size of the bones); about one year.

Remarks: In both the urns there were pieces of both children.

Trench E, burial 21.

Layer sealed by 13; depth 2 ft. 4 ins. BD4; urns 21 and 21a; date 3-2-56.

Pieces of child's skull, pieces of upper jaw, left half of lower jaw, some teeth (molars, canine, incisors), pieces of ribs, very small pieces of extremities and other bones.

Age: The roots of the incisors in the lower jaw are about as long as the crown, the eye-tooth and the 1st molar just coming out (the roots of the teeth are broken in some cases); about 1 year old.

Remarks: There were no bones in urn 21a.

Trench F, burial 5.

Layer sealed by 10; depth 4 ft. 9 ins. BD3; urns 5 and 5a; date 23-2-56.

Many small pieces of child's bones, pieces of ribs, vertebrae, extremities.

Age: Infant(?)

Remarks: Probably also pieces of animal bones; on some bones distinct scratches. In urn 5a there were no bones.

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Trench F, burial 7.

Layer 11; depth 4 ft. 9 ins. BD3; urn 7 and 7a; date 23-2-56.

Small pieces of child's skull and skeleton, partly sticking together.

Age: A small piece of lower jaw shows that the molars had not come out; the crowns are low. In the case of two incisors the roots are shorter than the crowns, they begin a new line (*Fig. 207, 7*); one of the incisors has a big enamel cap (the root is broken off); 6 months to 1 year.

Remarks: Many animal bones (dog? bird?. bones of cattle?). One piece of bone (cannot be further identified) with distinct cuts (*Fig. 207, 8*). Accompaniments—3 carnelian beads.

No bones were found in urn 7a.

Trench F, burial 8.

Layer sealed by 10; depth 4 ft. 9 ins. BD3; urns 8 and 8a; date 24-2-56.

Pieces of skull, extremities and the right half of pelvis.

Age: Newly born child or a little older.

Remarks: 2 pieces of the bones of the extremities of an adult which are strongly weathered. One piece with peculiar form (perhaps worked upon ?) (*Fig. 208, 9*).

No bones in urn 8a.

Trench F, burial 9.

Layer sealed by 10; depth 4 ft. 9 ins. BD3; urns 9 and 9a; date 24-2-56.

Child's skeleton, nearly complete. Some parts of skull strongly pressed in and sticking together.

Age: Newly born child?

Remarks: No bones in urn 9a.

Trench F, burial 10.

Layer 11; depth 4 ft. 10 ins. BD3; urns 10 and 10a; date 21-2-56.

Bone breccia; possibly human.

Age: Indefinite, possibly a child.

Trench F, burial 15.

Layer 11; depth 4 ft. 10 ins. BD3; urns 15 and 15a; date 22-2-56.

Bone breccia (*Fig. 208, 10*); possibly human.

Age: Indefinite, probably a child.

Remarks: No bones in urn 15a.

Trench F, burial 16.

Layer 11; depth 4 ft. 10 ins. BD3; urns 16 and 16a; date 22-2-56.

A few small pieces of bones; possibly human.

Age: Indefinite, possibly child.

Remarks: One bone piece with marks of burning (?).

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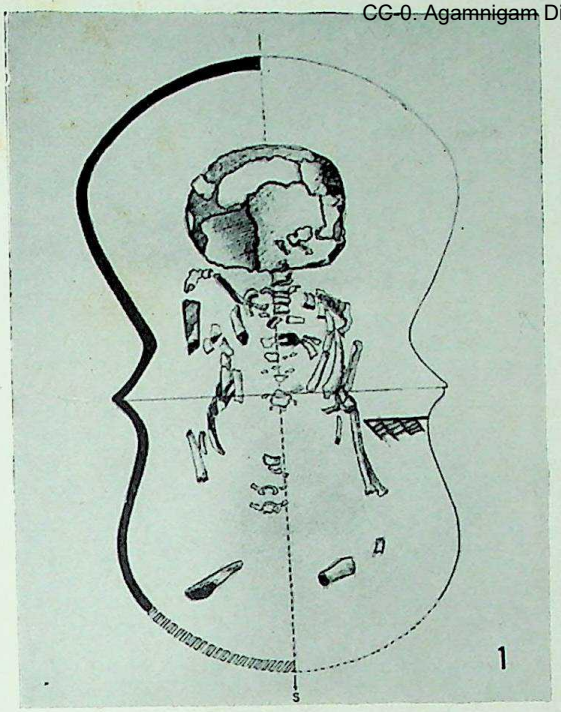

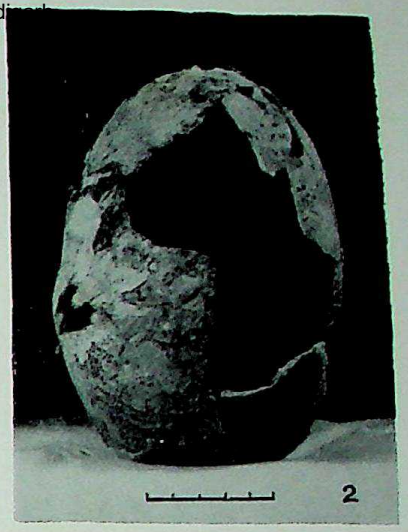

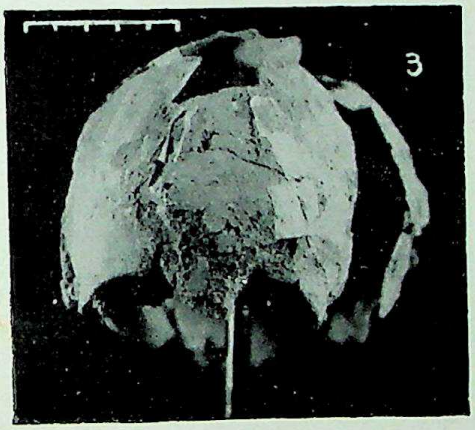

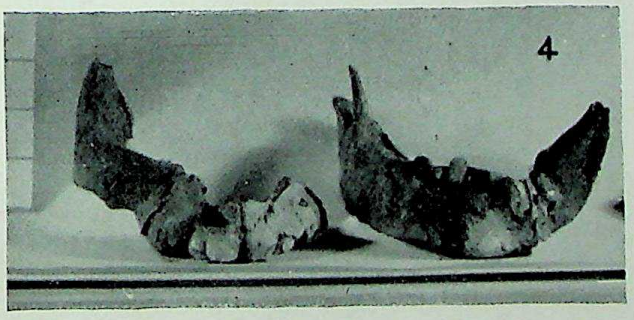

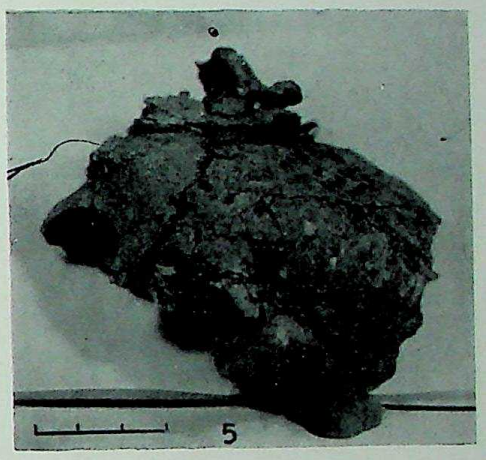

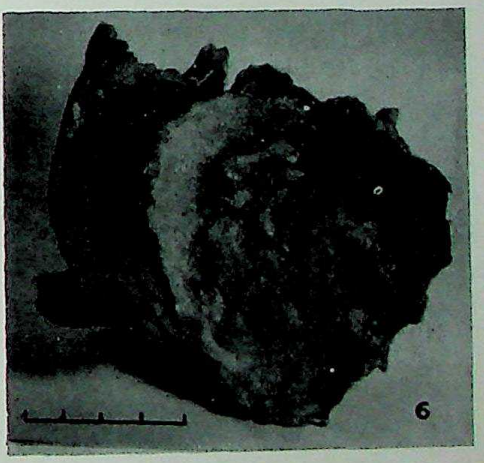

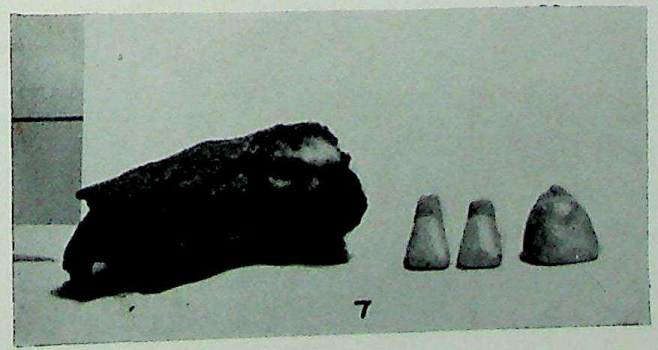

Fig. 207: Human Skeletal Remains, Period III *(See pp. 506-510 and 513)*

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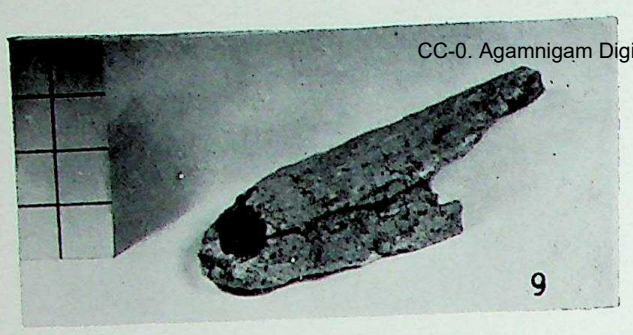

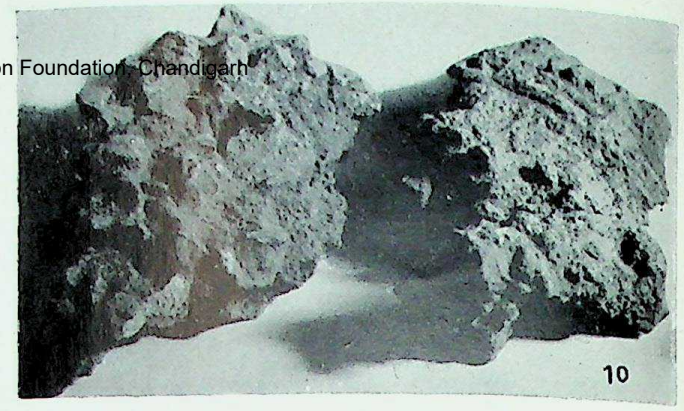

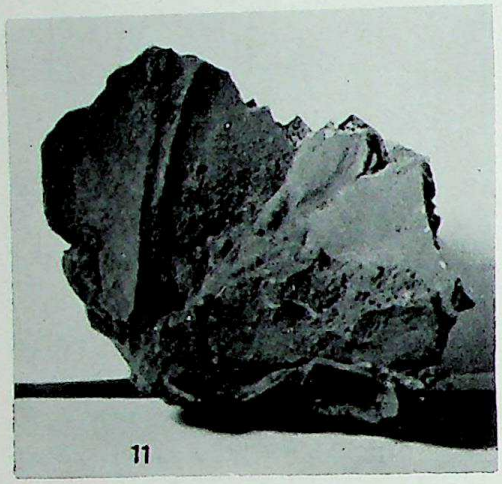

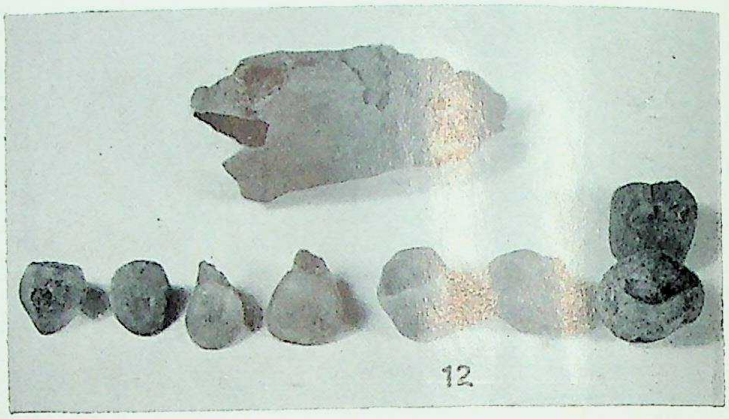

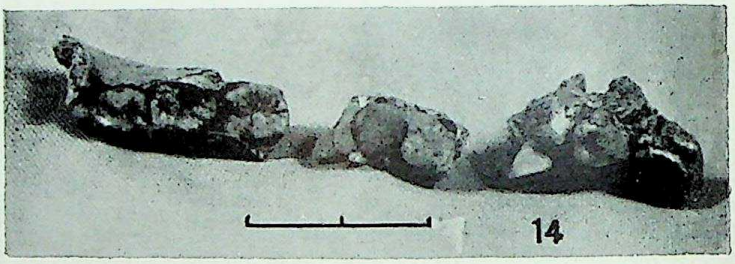

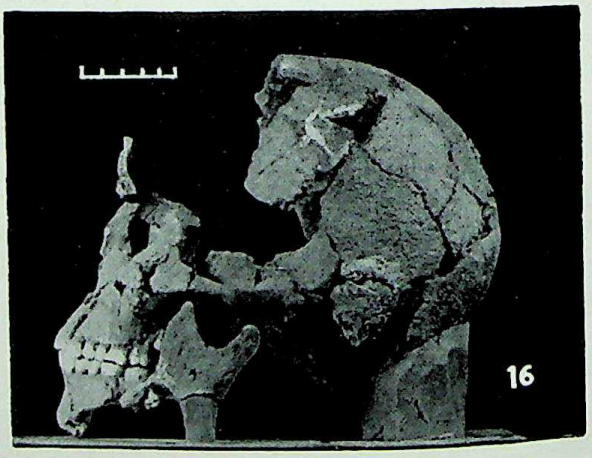

Fig. 208: Human Skeletal Remains, Period III (See pp. 510, 513, 518-519)

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Trench F, burial 17.

Layer 11; depth 4 ft. 10 ins. BD3; urns 17 and 17a; date 22-2-56.

Small bone pieces; one piece from the shank of an extremity; possibly human.

Age: Indefinite, probably child.

Remarks: One piece with marks of burns (?).

No bones in urn 17.

Trench F, burial 24.

Layer sealed by 12; depth 2 ft. 4 ins. BD4; urns 24 and 24a; date 7-3-56.

Pieces of child's skeleton. There are pieces of vertebrae, one clavicula (?), of a right blade of pelvis, of extremities (radius, ulna, tibia?), several phalanges.

Age: About 1 year.

Remarks: A small extremity bone of an animal (mouse?).

The top part of the body was in urn 24, the pelvis and legs were in urn 24a.

Trench F, burial 25.

Layer sealed by 13; depth 1 ft. BD4; urns 25 and 25a; date 7-3-56.

Many small pieces of a child's skeleton, many of them sticking together. There were among others pieces of frontal bone (*Fig. 208, 11*), one piece of right os petrosum, pieces of lower jaw and seven teeth (*Fig. 208, 12*); one tibia.

Age: About 1 year.

Remarks: Also present pieces of animal bones.

No bones in urn 25a.

Trench F, burial 27.

Layer sealed by 12; depth 11 ins. BD4; urns 27 and 27a; date 9-3-56.

Pieces of ribs, vertebrae, humerus, radius, lower extremities, 2 phalanges; pieces of skull absent.

Age: Infant ?

Trench F, burial 28.

Layer sealed by 12; depth 1 ft. BD4; urns 28 and 28a; date 9-3-56.

Remains of child's skeleton. Top of skull considerably damaged; pieces of facial part of skull; further pieces of skeleton of trunk and extremities.

The milk molars are sticking in the lower jaw, while the first permanent molar is still in the jaw (not yet come out) (*Fig. 208, 14*). The incisors are just coming out.

Age: About 6 months to 1 year.

Remarks: Form of skull: Maximum length 134 mm, maximum breadth (97 mm).[1] The skull bones were in urn 28 along with the breast and upper part of the arms; while in urn 28a there were some vertebrae, the lower part of the arms and pieces of the lower extremities (*Fig. 207, 1*).

1. All numbers which are a little uncertain are given brackets.

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Trench H, burial 10.

Layer 12; depth 4 ft. 10 ins. BD3; Storage jars 10 and 10a; date 20-2-56.

The skeleton, as it is found in the excavation (see plate XV in the *Indian Archaeology* 1955-56) shows that it is certain that the dead individual was placed in the jars, while bones of the skeleton were still holding together. The dead body is resting on the back, the head is inclined to the left, the knees are slightly drawn up and turned to the left.

Bones found: The skull is not so complete as one would expect from the photo. Large parts of the frontal bone are missing (*Fig. 208, 15*), also pieces of the base of the skull (*Fig. 209, 18*). These pieces might have been very brittle and might have been lost on that account. The bones found were considerably broken, but could be put together without difficulty. Other bones present were: pieces of clavicula, a large piece of the right scapula, rib pieces, pieces of vertebrae (also the epistropheus and pieces of atlas), small pieces of pelvis; also pieces of both humeri, ulnae, radii (right nearly whole, left only the diaphyses), some wrist bones, many phalanges; from the legs only the diaphyses of the right femur. To judge from the photo, one would expect more bones of the lower extremities; but they were not there. Also all the bones of the upper extremities which were there are not seen in the photo.

In addition to these bones from the skeleton, there are pieces of the vertebrae of a small child. Perhaps these got into the urn with the earth accidentally. Further there were two animal bone pieces (one piece of the orbital of a large animal and a small piece of the extremity (?) of a small animal).

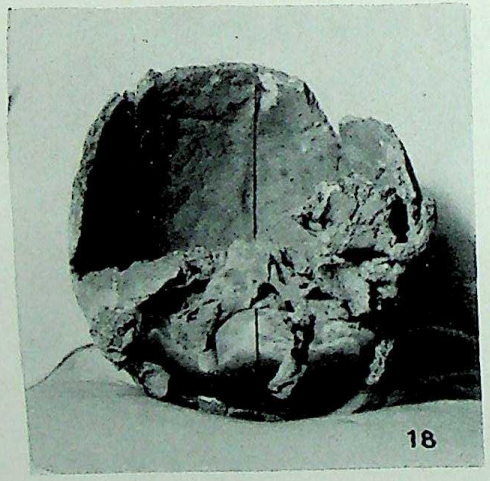
The condition of the skeleton is medium (not too good, not too bad). The bones are fairly brittle and the surface is strongly corroded. Some pieces of the skull have been deformed after death, especially the os occipital to the right near the joining with the os temporal and the left half of the skull below the parietal tuber. It is a slight depression of the bones, which runs uniformally from the parietal to the temporal. Both bones show a good joint with one another. There is not much asymmetry on the base of the skull (*Fig. 209, 18*). This small deformation has been taken into account in the measurement of the breadth of the skull and face.

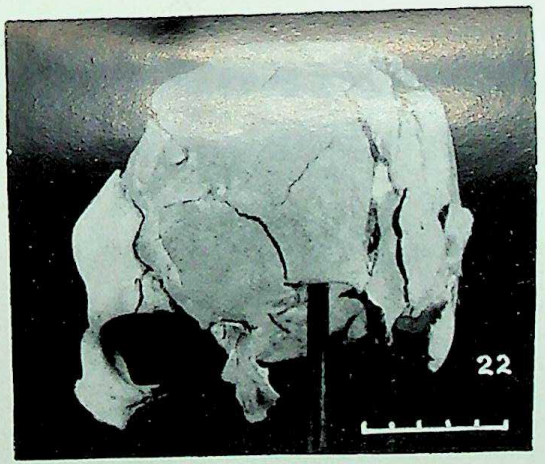
The skull could be put together to a great extent. I have generally based my conclusions on a comparison of the sides as a number of bones only of the right or the left side were available. I have made use of the results of I. KARVE on the asymmetry of the skull on the assumption that here also the right-left asymmetry is very slight. [1] As regards *the composition of the bones*, they were very brittle. The skull was moderately heavy. The colour of the skull was grey-brown.

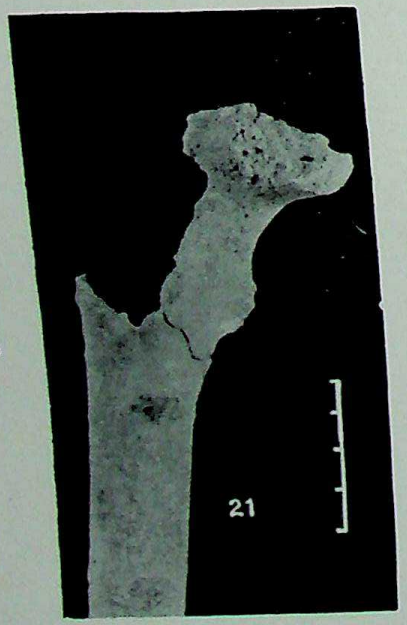
The individual age. We are dealing here with the bones of a still young person. The sutur lambdoid and sagittal do not show the closure of the seam and there is a relatively sharp zig-zagging. The synchondrosis sphenoccipitalis is still open at the basal part of the occipital. The third molar has not broken through the jaw. The root channels are wide open. The other teeth do not show any rubbed off surface.

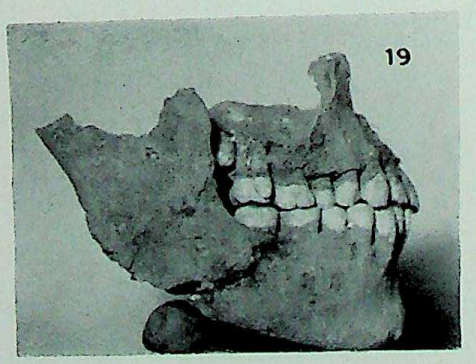
The bones of the extremities could be used for age determination only to a limited extent, because the end pieces were not available. In the case of the right humerus the epicondyle medialis has not joined with the diaphyse completely (*Fig. 209, 20*) and in the case of the radius the top is still free. The proximal end of the femur shows that the diaphyse and epiphyse have not joined (*Fig. 209, 21*). Also the processus acromialis of the scapula has not joined on the shoulder blade. If one takes into account the closing of the seam, in the case of the skull and the skeletal bones and on the other hand the

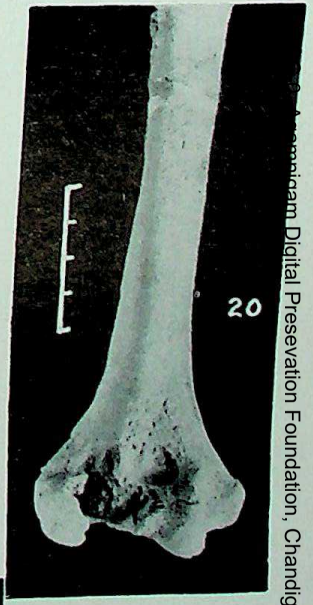
1. KARVE, I., 1931: *Normale Asymmetrie des menschlichen Schädels.* Inaug. Diss. Berlin.

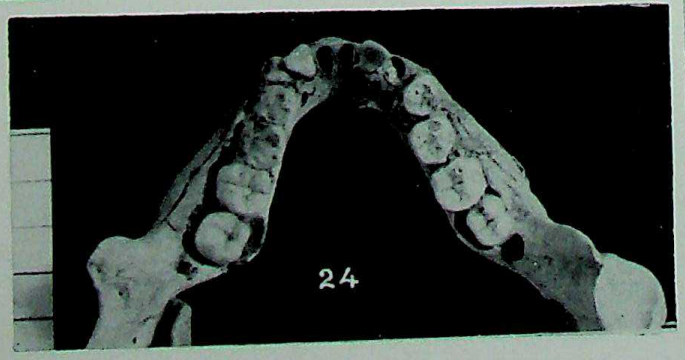












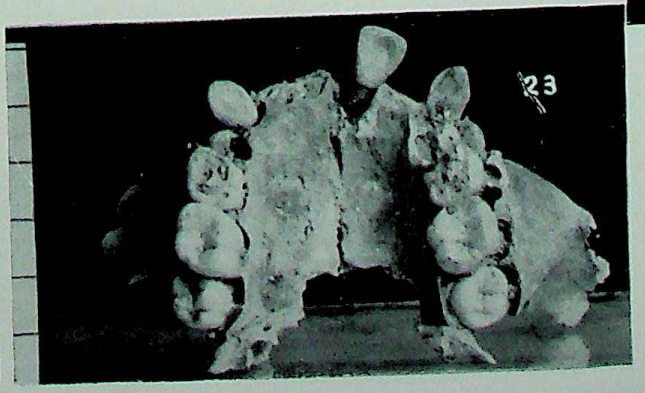


Fig. 209 : Human Skeletal Remains, Period III. *(See pp. 514, 521)*

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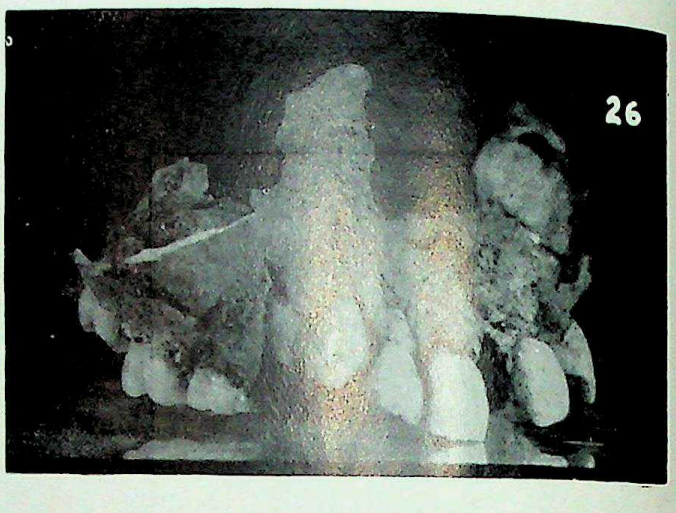

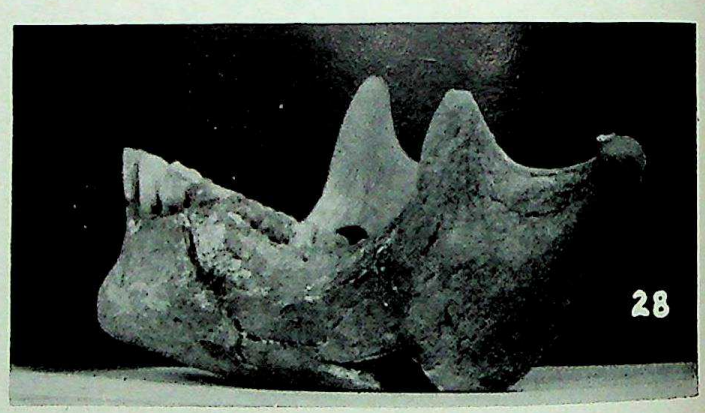

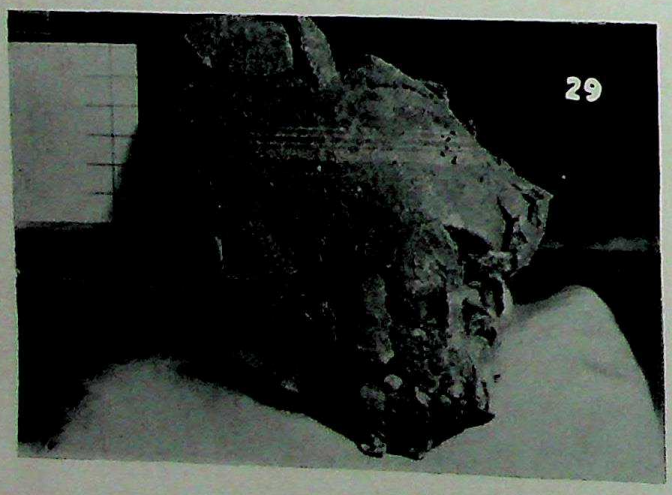

Fig. 210 : Human Skeletal Remains, Period III. *(See p. 521)*

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jaw, one can fix the age of the skeleton at about 20 years, not younger than 17, not older than 24.

Sex: The bones of the skull are moderately thick; the skull is of medium size and medium weight. There is no pronounced muscle relief either an os occipital or the lower jaw. The parietal protuberances are distinctly seen. In the case of one piece of the os frontal (which could not be fitted in), there appears to be a tuber frontal (light convex curvature on the bone piece). The right processus mastoid is of medium size (the left one is missing). All these characteristics indicate the female sex. The indications of several characteristics of the facial part of the skull also point to the same conclusion (*e.g.* the sharp upper edge of the right orbital—the left one missing—absence of an arcus superciliaris and, when one assumes that the setting of the right lower piece is correct, the considerably steep forehead). The considerably jutting out of the upper orbital edge in relation to the processus frontalis of the os maxillar is however, remarkable. The breadth between the eyes (dakryon—dakryon) must have been fairly large. The same applies to the two nasalia, so that even with moderate inclination of the two bones of the nose, the nasion is approximately in the plane of the lateral orbital edge. One can conclude from all this with reference to sex determination that the frontal bone is only slightly inclined.

The teeth are large; but are not particularly remarkable in the context; they can belong either to a man's or a woman's skull. The jaw curvature is, in the plane of the last molars, medium broad and narrow down in the first part. The overall outline is not particularly round as one usually finds in the case of a man's jaw.[1] The branch of the jaw (Kieferast) is inclined. The last two points are in favour of the female sex. If one examines the few other bones with a view to determine the sex, no definite conclusion is possible.

According to the indications with reference to the skull, the skeleton is probably of a woman.

Measurement of the skull, morphological indications and a comparison with the skull measurements according to R. MARTIN.

The length and breadth of the skull. The length cannot be determined accurately because the glabella region is missing. One can however, make use of a subsidiary measurement, which I have tried to use. This is the distance from opisthocranio ı up to a "point" on the upper orbital edge on the extreme outside. In the case of skulls used for comparison, the difference between this distance and the biggest length (g-op) was about 8 mm. In the case of our skull the distance from opisthocranior (op) to the outside "point" on the edge of the orbital edge is 177 mm. The maximum length of the skull would, therefore, be (185 mm). An especially convex curved glabella region, which would raise this measurement, cannot be assumed in the case of this skull, which is also supported by the absence of a marked arcus superciliaris. The slight displacement of the occipital has no influence on the length measurement. 185 mm. is very long for a female skull. The front piece with the orbital ridge can scarcely have been shifted backwards because the processus frontalis of the os zygomaticus fits with the right big wing (ala magna) of the os sphenoidalis and the pieces of the os maxillar also fit well.

The maximum breadth of the skull, when considered in conjunction with the slight depression on the left parietal is about (134 mm). According to this measurement the skull is medium broad to narrow. The length-breadth index (value 72) characterises the skull, with reservation, the dolichocranial group.

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1. MOLLISON, Th., 1938: "Spezielle Methoden anthropologischer Messung". In: *Handbuch der biologischen Arbeitsmethoden*, edited by E. ABDERHALDEN.

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In the *norma verticalis* one notices a prominent parietal protuberance. Towards the back, the skull becomes very narrow, the back of the head is slightly bulged out. On the other hand the skull does not become much smaller towards the front side, when one compares the maximum cranial breadth with the maximum frontal breadth.

The frontal bone. Although only a few pieces are available, one can draw some conclusions about the form and breadth of this bone. The distance, frontomolare temporale—frontomolare temporale (fmt—fmt) can be exactly measured as 111 mm. The smallest forehead breadth would be about (106 mm), scarcely smaller. This measurement is big even for a male skull. Accordingly the fronto-parietal index with a value of (79) is very high. Compare the value 77 for female Australian skulls.

Nothing can be said about the curvature of the frontal bones, but something certainly can be said about the inclination: the forehead is nearly vertical.

About ¾ths of the orbital ridge is intact. A pronounced arcus superciliaris would have given a slight bulge towards the sides. This is not the case.

The norma occipitalis shows a distinct roof-shape (*Fig. 208, 17*). The sutura sagittal is raised like a ridge, the parietal lumps protrude in an angular way, the sides go downwards and inwards. The right parietal is only slightly curved. The maximum breadth of the skull is approximately near the sutura squamosa. The maximum breadth of the back of the skull (asterion breadth ast—ast) is approximately (95 mm). In *the norma sagittalis* (*Fig. 208, 16*) it is seen that the vertex slopes uniformly from bregma towards the back. The occipital is slightly bulged. The facial skull shows a prognathy of both jaws (compare also *Fig. 208, 19*). The chin is well curved out.

The height of the top of the skull is definitely big. The nasion-bregma height is 134 mm. The porion-bregma height can be given as 114 mm towards the left porus accusticus. The difference between these two measurements is 20 mm, a fairly high value characteristic of long skulls. In relation to the length and breadth the skull is medium high (length-height index 72, orthocephal, breadth-height index 95, metriocephal). The measurements of the ear-height show somewhat lower values (length-ear height index 61, breadth-ear height index 81).

The capacity of the skull. The capacity of the skull calculated from the basion-bregma height of 134 mm according to the formula of Pearson is (1330 ccm), a value corresponding to the average of modern European female skulls.

The facial height. The nasion is missing and also I have used a subsidiary measurement. If one projects the intersection point of the three skull bones, the nasale, the frontale and the processus frontalis of the os maxillare on the median sagittal plane then the distance of this point from the gnathion is (112 mm). As the nasion must be at least 1 mm above this point, the actual morphological height of the face (n-gn) must be longer. It may be from 113 to 118 mm. Corresponding to that the upper facial height could be about (65 to 70 mm). This measurement is medium to big.

The facial breadth is difficult to be measured, as the right cheek bone (Jochbogen) is missing and the left one is apparently bent inwards. I judge the zy-zy breadth, measured by projection, to be about (125 mm), which is a medium value for female skulls. If one puts the facial height as 115 mm. the index would have a high value of (92). The face appears to have been high in comparison to breadth.

The other breadth measurements of the face show a development of breadth in the middle part of the face, which is already evident in the high jugofrontal index (minimum breadth of forehead: breadth at cheek bones) of (85). In the case of Australian

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female skulls it is 82. Similarly the fronto-biorbital index (the minimum frontal breadth: breadth of upper face, fmt-fmt, 111 mm) of (96) has a very high value. The cheek bones do not stand out. The breadth between the eyes (largeur orbitaire, d-d, *viz.* 30-32 mm) is quite broad. It can also be assumed that the nasalia were broad.

The nose. As against this, the apertura piriformis with the maximum breadth of 24 mm is rather small. This measurement can be accepted with certainty, because a large piece on the right and a smaller one on the left has been found intact. The height of the bony nose can be judged only approximately to be about (44-49 mm). The nose is thus rather low and not high (lower value in the case of Australian female skulls 38 mm; highest values in the case of Spanish female skulls 59 mm). On account of uncertainty of the nose height, the nasal index cannot be given. At lower edge of the apertura piriformis one sees the beginning of a sulcus nasalis.

The orbita. The orbita is small. The smallest is (32 mm) or a little more. The orbital breadth (mf-ek) can be estimated to be (40 mm). The orbita would be medium high according to the calculated index (40). The right orbita slopes off to the side and shows a straight upper edge.

The fossa canina rem on both sides fairly flat.

The lower jaw. The breadth of the lower jaw (go-go) would be about (102 mm; both gonia are missing), which is very broad for a female skull. The jugomandibular index (the relation between facial breadth and lower jaw breadth) would then be very high. Also the breadth of the kondyles (kdl-kdl, *viz.* 188 mm), is to be characterized as large rather than medium. The breadth index of the jaw (lower jaw breadth: breadth of the kondyles) has the value of (86), which is high, does not show a strong inclination of the jaw branches towards the median sagittal plane. One could therefore expect that the face was not pointed towards its lower end, but rather broad; perhaps in outline approximately rhombic or more squarish. The breadth of the ramus shows a medium value (34 mm); similarly also the height of the ramus (an exact value cannot be given). The angle of the branch can also not be measured exactly. The two rami are slightly inclined towards the back side. The height of the chin—33 mm—is medium high. The chin juts out slightly.

Profile angle. The face is prognathic (*Fig. 208, 16*). The full profile angle could not be measured as the nasion was missing. The alveolar angle (about 50°) shows a strong prognathy of upper jaw.

The remaining skeleton-bones, the body height. The skeleton is not grown up, length could only be taken on the right arm and these measures also were not exact as the bones were broken.

TABLE II.

The measurement of the length of the bones of the upper extremities and the calculated body height

	in mm	MARTIN'S limiting values	Body height according to MANOUVRIER male	female	according to BREITINGER male
Humerus, biggest length ..	(320)	260-380	163	161	168
Humerus, whole length ..	(315)	—	—	—	169
Ulna biggest length ..	(265)	218-305	167	170	—
Radius, biggest length ..	(245)	190-288	166	167	170

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For the absolute values suitably comparable values could not be found. MARTIN's difference between the upper and lower limits for ulna would indicate that this bone in the case of our skeleton is particularly long. The same is the case for the radius (see Table II). I would, however, not like to draw any further conclusions from this; firstly because the measurements on our skeleton are very approximate and secondly because the person had not completed its growth.

The calculated values for the body length according to MANOUVRIER or BREITINGER are to be accepted with reserve. The figures let us conclude medium height, if it is a male skeleton and a great height if it is a female skeleton.

The bones of the extremities are on the whole strong. The femur shows a distinct pilaster.

Summarising one can state the following conclusions:

The skeleton belongs to an approximately 20 years old person, probably a woman.

The skull is medium size. Only a few measurements could be taken with accuracy. However, even with the approximate values quite a good general picture of the skull can be obtained.

The skull is long (about 185 mm), narrow (about 134 mm) and medium high (basion-bregma height 134 mm) and has a capacity of about (1330 ccm). The forehead profile is fairly vertical. The glabella and the arcus superciliaris are not pronounced. The back of the head is slightly bulging. The skull does not narrow down towards the forehead, but tapers off towards the back. The breadth shows a medium value (about 125 mm by projection). The height of the face is rather high. Because the nasion is missing, an accurate measurement cannot be given. The minimum frontal breadth, the middle part of the face and the lower jaw are broad. The cheek-bones do not protrude. The breadth between the eyes is large. The breadth of the aperture piriformis is rather narrow. The height of the nose cannot be estimated, but it could not have been very high. A sulcus nasalis is indicated. The orbitae are of medium size; the right orbita slopes off to the side and shows a straight upper edge. The fossa canina is on both sides fairly flat. In the case of the lower jaw the branches are only a little inclined towards the median plane, but strongly inclined towards the ear-eye-plane. The chin juts out. Seen in profile, the face is prognathic, the alveolar part of the upper jaw stands out strongly.

To judge from the available bones of the extremities, it appears to be a massive skeleton. The calculated body height is very high for a female skeleton, medium for a male skeleton.

It is not possible for me to give *a typological racial diagnosis* for this skeleton. The person could undoubtedly not be of any distinct race, as we find indications of characteristics similar to the kind of women one finds in India today. The prognathy, the indication of a sulcus nasalis and the relatively broad face, also the long, narrow head, could be regarded as characteristics of the primitive people in the jungles of the Deccan (Gondid race (?) according to von EICKSTEDT).

Trench H, burial 19 = 11A.

Layer 12; depth 4 ft. 10 ins. BD3; storage jars 19 and 19a and urn 11A; date 23-2-56.

The skeleton of a rather older child; nearly complete.

The position in the earth and the state of preservation. The child was in a double urn on its back with slightly drawn-up legs. An urn was inverted over the knees (see plate XV in *Indian Archaeology* 1955-56). The hands must have been crossed over the breast.

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The fingers of the left hand are sticking to the right side of the pelvis. The head was bent considerably towards the right and upwards, a very unnatural position. Possibly, this position got more pronounced post mortem. The face was pressed in and the top of the skull was in pieces. There were no signs either on the skull or on the other bones of the skeleton to indicate that death was caused by violence. The skull could not be completely restored owing to its having been crushed to pieces. The lower jaw was in a good condition (see *Figs. 209-10, 22-28*). The other bones present were both scapulae, claviculae (only the left complete), ribs (many complete), pieces of sternum, many well preserved vertebrae (including the epistropheus and the atlas), pieces of os sacrum and pelvis, all arm bones (some complete), both diaphyses of the femora and hands.

Age: About 10 years. This is based on the break-through of the teeth, their form and size (*Figs. 209-10, 23-26*); the ossification of the epiphyses.

Sex: Cannot be determined.

Measurements, morphology: The skull (*Fig. 209, 22*) is fairly large, long and narrow and appears elliptical. It was, however, so much crushed and broken that only a few measurements were possible. The root of the nose is not very broad (mf—mf 22 mm ?) and shows no sulcus nasalis (*Fig. 210, 26*). A distinct alveolar prognathy is seen (*Fig. 210, 25*). The lower jaw of the child is massive; the ramus of the jaw fairly low and broad, not very much inclined backwards.

The bones of the extremities are thin. The maximum length of the left humerus is about 235 mm. Comparable values for other material were not available to me. Nothing can be said about the height of the child.

Remarks: There were also two vertebrae and some small pieces of the skeleton of a younger child. Perhaps they got accidentally into the urn along with the earth. There was also one bone of a animal skull (rodent?), small pieces of wood and charcoal and a small microlithic knife.

Trench Z, burial 14.

Layer 9; depth 8 ins. BS; no urns; date 17-2-56.

Child's skull very much crushed which could not be put together (*Fig. 210, 29*). The colour of the skull is dark grey and very much incrusted. The form of the skull looked at from above is elliptical, the circumference is relatively small. There is strong prognathy of the upper and lower jaw. Only pieces of other bones of the skeleton were found, which were incrusted with earth and were very brittle.

Age: The first permanent molar has erupted (*Fig. 210, 30*); about 6 years.

Remarks: There were also small pieces of charcoal.

If one considers these skeletal finds, one can say about the skulls (where they were still recognizable or subject to measurement) that, seen from above, they show a long narrow form. There is no skull that is broad. Although the head form of a person changes during the life time, a definite, *inherited* form can often be noticed even in a child. Another characteristic which was seen in the case of some of the finds is the prognathy of the jaw.

At the end there is one other question to be discussed. This has already been referred to in the beginning and that is: *how did the skeleton get into the urns*?

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The signs of a disposal of the body by burning and a later burial as in the case of hethiti finds from Osmankayasi, near Bogazkoy in Anatolia[1] are present only to a very small extent. The marks of burning are seen on very few bones and are so few that the skeletons do not appear to be burials of fully cremated corpses (perhaps burial 16 and 17 ?); neither do they appear to be burials of partially cremated corpses. The charcoal pieces which one has found with some of the skeletal finds may be derived from burnt offerings (?); it is possible that they were introduced along with the earth above, into the urns.

It appears to me, however, more possible that the dead bodies of the children were placed into the urns after a process of dessication.[2] In such a process, parts of the dead body can be lost. When the joining held the bones together, it would have been convenient to bury child's whole body in the urn; otherwise only parts of the body were buried. The fact that in most cases only pieces of bones were found cannot be completely explained by saying that the bones were brittle and were crushed in the ground. There are also no signs of violence against the body either before or after death. The light scratches on a few bones cannot be interpreted as such.

For comparison with the Nevasa finds, one can take the Indian finds at Brahmagiri[3] There also children's burials have been found, about which it is said (page 202): 'The child or infant being folded up into close compass and packed into the pot.'

In addition one found in Brahmagiri a burial of a 8-10 year old child in a stretched position, the head was directed towards the east (see plate CIX/B). These finds were at a depth of 4 meters.

No anthropological investigation of the Brahmagiri finds has taken place.

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1. SCHAEUBLE, J., 1958: *Anthropologische Untersuchung der hethitischen Skelettfunde aus Osmankayasi bei Bogazkoy* (Anatolien). In: K. BITTEL, W. HERRE, H. OTTEN, M. MÖHRS, J. SCHAEUBLE "Die hethitischen Grabfunde von Osmankayasi" 71. Wiss. Varöff. d. Dtsch. Orient-Ges., Berlin 1958, S. 35-59.

2. Compare the reference on page 1 from *Indian Archaeology* 1955-56, page 7. DEO, S. B., 1956: *History of Jaina Monachism.* Deccan College Diss. Nr. 17, Poona. p. 431.

3. See the remark on page 506.

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APPENDIX 2

ANALYSIS OF COPPER OBJECTS, NEVASA

by

S. V. GULAVANE
R. G. DHANESHWAR
T. R. SARANATHAN

Sub: Analysis of three samples stated to be 1. Chisel, 2. Bangle and 3. Copper-bead excavated from Nevasa.

Reference letter No. 203/850, dated 13-10-1958 to Shri E. C. Allardice, Controller, AEET, Bombay.

The results of the investigations carried out on the samples mentioned above are as follows:

(A) *Chemical Analysis :*

Serial No.	6721	6722	6723
Code No.	Chisel	Bangle	Copper-bead
	%	%	%
Copper (Cu)	94.41	98.31	99.06
Tin (Sn)	2.72	—	—
Lead (Pb)	0.61	—	—
Iron (Fe)	0.10	—	—
Manganese (MN)	0.17	—	—
Nickel (Ni)	0.20	—	—
Zinc (Zn)	0.13	—	—

Minor constituents in the Bangle and Bead samples were not determined by chemical analysis because sufficient sample could not be removed without serious deformation of the objects.

Considerable oxidation of the copper objects was observed, particularly in the case of the Bangle.

(B) *Spectrographic Analysis:*

Sample 1: Chisel shows Cu and Sn as major constituents, with Fe, Ag, Pb, Bi, As, Ni, Si, Mn, Zn, Al, Mg and Ge as minor constituents.

Sample 2: Bangle shows Cu as major constituent, with Sn, Fe, Ag, Pb, Bi, Ni, Si, Mn, Zn, Al and Mg as minor constituents.

Sample 3: Bead shows Cu as major constituent, with Sn, Fe, Ag, Zn, Pb, Mg as minor constituents.

Approved.

V. T. ATHAVALE
Officer-in-Charge, Analytical Division,
Atomic Energy Establishment, Trombay,
Government of India.

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APPENDIX 3

REPORT ON THE PROBABLE TECHNIQUES OF FABRICATION OF THE COPPER OBJECTS FOUND DURING NEVASA EXCAVATIONS.

by

M. K. ASUNDI and TANGRI

The three articles of Nevasa Excavations, namely:

(1) a copper chisel (Cu—94.41%, Sn—2.72%, Pb—0.6% and other impurities).

(2) a copper bangle (Cu—98.31% plus impurities).

(3) a hollow copper ball (bead) of 99.06% purity,

have been metallographically examined in the Metallurgy Division laboratory. The description of their metallographical structures and the conclusions drawn therefrom as to the probable techniques of their fabrication are as follows:

(1) Copper Chisel :

Both ends of the chisel are expected to be severely cold worked during its actual use. Hence, a mid-way spot on one of the flat faces of the chisel was selected for metallographic study to obtain a true and representative structure of them as fabricated article. This structure, as shown in Photomicrograph 1, (*Fig. 211, No. 1*) consists of a fine grained single phase alloy. There is evidence of dendritic segregation which is typical of cast alloys. But these dendrites have been broken up with a good measure of success, which indicates the use of hot forging after the casting process. It appears that the chisel was hot forged and the forging process was finished just above the recrystallization temperature (say at 500°c) as the metal is recrystallized but has very fine grain structure.

(2) Bangle :

A small piece from one end of the bangle was taken and two sections—one longitudinal and the other transverse—of this specimen were examined. The microstructure, Photomicrograph 2, (*Fig. 211, No. 2*) shows recrystallized large grains of a single phase alloy typical of a metal worked at a relatively high temperature. There is an elongated cavity at the centre of the specimen and extending almost up to its surface. This could possibly be the original pipe in the cast ingot which would get elongated during subsequent working.

(3) Hollow Ball :

The micrograph of the hollow ball (as seen in *Fig. 211, No. 3*) consists of large recrystallized grains indicating that the ball was produced by hot hammering.

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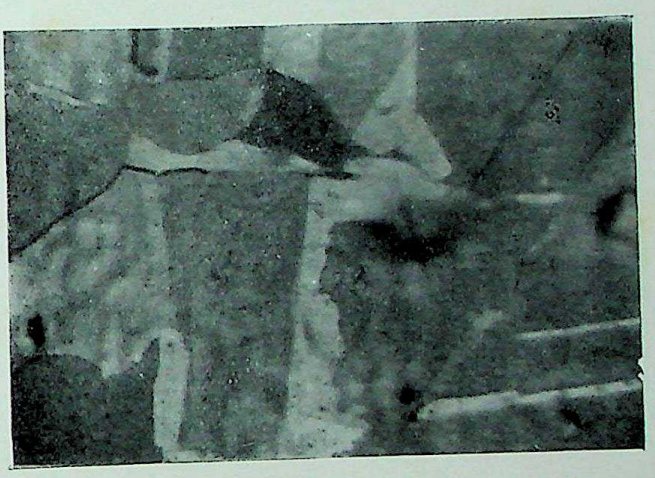
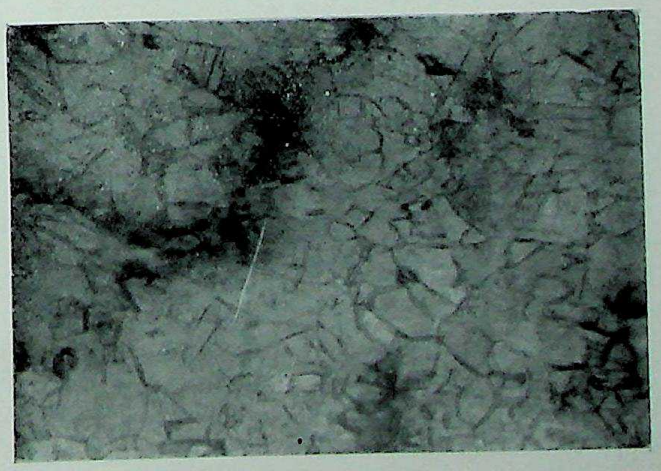
1



2



3

Fig. 211 : Photomicrographs of Coppel Objects, Nevasa (*See p. 524*).

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APPENDIX 4

REPORT ON THE BLACK DEPOSIT ON THE INNER SURFACE OF A SHERD FROM NEVASA

by

Dr. B. B. Lal

Archaeological Chemist, Dehra Dun.

The black incrustation on the inner surface of the sherd is organic in nature. When heated it gives off some fumes and softens, showing incipient fusion but in its present condition, it is rather brittle. Under the hand lens it shows a resinous lustre and conchoidal fracture.

Small amounts of the scrapings were tested for solubility and it was found that the black deposit is highly soluble in benzene and nearly equally soluble in toluene. It is appreciably soluble in carbon tetra chloride, but is almost insoluble in rectified spirit, ether and turpentine.

From the above it became clear that the black deposit was some sort of resinous or tarry matter. The black deposit was, therefore, examined chemically to determine its asphaltic or resinous nature. The well known Sotrch-Morawaski reaction for resins gave a dark colouration but no positive evidence for the presence of resin. Tests with copper acetate and alum tincture were also inconclusive. It may, however, be pointed out that in the case of resins which have greatly aged, the above tests become unreliable.

The black incrustation was further subjected to fluorescence analysis. Solutions in benzene, toluene and carbon tetra chloride were exposed in silica dishes to the action of ultra violet rays. Each solution showed a pale yellow fluorescence. Solutions of colophony showed the same fluorescence and so did solutions of asphalt. In each case the solution fluoresced a pale yellow colour in ultra violet light and showed a milky appearance.

The above results show that the black deposit was some sort of asphaltic matter. It may have been mixed with resinous material as well, but the resin has probably oxidised and largely altered.

It may be stated here that the wine jars belonging to ancient Egyptians, which are still preserved, showed a resinous or asphalt-like substance at the bottom. This was probably added for preserving the wine. This practice was also in vogue in Roman times. For storing wines, the Romans used wine jars or amphora with handles, the inside of which had been coated with pitch to reduce the porosity. Like the Egyptians, the Greeks and Romans mixed resinous ingredients into the wine. According to Pliny, resins were also used for lining the interiors of vessels.

From the above discussion, it would appear that the black deposit on the inner surface of the potsherd represents a resinous, asphalt-like matter which may have been used as coating for reducing the porosity of the pot. It is equally likely that the black incrustation may have formed as a result of sedimentation from the liquids contained in the pot in the course of storage.

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APPENDIX 5

TERRACES ON THE GODAVARI AND THE PRAVARA

by

H. D. SANKALIA

The statement on page 75 requires a modification in the light of the recent observations made by the writer and Shri ANSARI in January, 1960, after the *Report* was sent to the Press

The upper reaches of the Godavari at Gangapur,[1] Tapovan[2] near Nasik, Tamasvadi[3] and Nandur-Madhmeshwar[4] and on the Pravara at Vite,[5] Mehenduri,[5] Induri[5] and Akola[6] exhibit fine vertical sections. At Vite, Mehenduri and Akola a thick deposit of a rubble-like but extremely well cemented gravel was found *in situ*, and it also contained olive-coloured tools of Series I only. In all these sites, it is capped by a thick deposit of yellowish silt which has weathered to reddish brown at Mehenduri and Akola. This, we think, is the top or the earliest terrace (Terrace I), its height being 44 ft.[7] at Vite, and nearly 40 ft. at Induri. It is against this—the high cliff—that the latter deposits rest. This is well indicated in a nala upstream at Rajur[8] beyond Vite, on the Pravara, near Niphad on the Kadva,[9] at Gangapur, Nasik and Nandur-Madhmeshwar where the cliff is nearly 66 ft. high. The second gravel bearing tools of Series II and occasionally of Series I lies like a small terrace (Terrace II) against the cliff at Nandur-Madhmeshwar, Tamasvadi,[1] Belpandhri,[1] Suregaon,[1] Bhalgaon[1]—all on the Godavari and at Mehenduri on the Pravara. Nowhere could we see the silt of the second aggradation, as at Maheshwar. But at Induri a second terrace was recorded at a height of 22 ft. from the present water level, and similar ones were observed at Vite, Nasik (near Tapovan) and Tamasvadi.

Almost everywhere the fringes of the topmost terrace (Terrace I) are covered by a loose kankari gravel. This includes a large number of microlithic flakes and tools generally of chalcedony. Thus, while the climatic oscillations mentioned above remain the same, we may briefly correlate the industries with the terraces as follows:

Terraces	Composition	Industries
I	Rubble gravel + thick deposit of silt	Early Palaeolithic : Cleavers, Hand-axes etc.
II	Cemented gravel	Middle Palaeolithic: Points, Scrapers etc.
Loose gravel-spread covering the fringes of Terrace I	Kankari and sandy gravel	Microliths

It may be mentioned that here the cemented gravel (Terrace II) was again found to contain animal fossils which are so far regarded as Middle Pleistocene in date.

These observations help to understand the Section at Locality V (Hathi Well) at Nevasa. Here the extremely well-cemented gravel forming a ledge at the mouth and to the right of the Nala is probably the last phase of Gravel I. On it and against its silt is plastered a thick layer of Gravel II. The last aggradation consisting of loose kankari gravel covers the top.

1. *Government of India Map*, 1 in.=1 mile No. 46 H/12 X 16.
2. *Ibid.*, 47 E/13
3. *Ibid.*, 47 I/1
4. *Ibid.*, 46L/4
5. *Ibid.*, 47 E/14
6. *Ibid.*, 47I/2
7. Measured by Abney etc.
8. See under 47I/2
9. See under 46L/4

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APPENDIX 6

IDENTIFICATION OF SEED SAMPLES

by

Economic Botanist to Government, Bombay State, Poona-5.

Sir,

With reference to your letter the seed samples sent by you are identified as under:

S. No.	*No. of samples*	*Local name*	*Botanical name*	
1.	No. 1105	Coriander	*Coriandrum sativum*, L.	— Period V
2.	„ 1585	Wheat	*Triticum* sp.	— Period V
3.	„ 5797	Safflower	*Carthamus tinctirias*, L.	— Period V
4.	„ 3691	Lang (Lakh)	*Lathyrus sativus*, L.	— Period V
5.	„ 3355	Gram	*Cicer arientinum*, L.	— Period IV
6.	„ 5795	Bajri	*Pennisetum typhoides*	— Period V
7.	„ 8393	Nagli (Nachni)	*Eleusine coracana* (GAERTH)	— Period V
8.	„ 3340	Wal	*Dolichos lablab*	— Period V

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IDENTIFICATION OF BURNT GRAINS FROM NEVASA

by

Economic Botanist to Government, Bombay State, Poona-5.

Sr. No.	*R. No.*	*Local Name*	*Botanical name*	
1.	4312	Bor or Ber	*Zizyphus jujuba*, L.	— Period V
6.	7928	—do—	—do—	— Period V
9.	3404	—do—	—do—	— Period IV
22.	3388	—do—	—do—	— Period IV
2.	5299	Kodra	*Paspalum scorbiculatum*, L.	— Period V
5.	4903	—do—	—do—	— Period V
7.	5795	—do—	—do—	— Period V
11.	5602-A	—do—	—do—	— Period V
15.	7834	—do—	—do—	— Period V
16.	5795	—do—	—do—	— Period V
18.	5957	—do—	—do—	— Period V
21.	6201	—do—	—do—	— Period V
3.	6112	Watana or Matar	*Pisum sativum*, L.	— Period V
4.	8393	Nachni	*Eleusine coracana*, GAERTH	— Period V
8.	4312	Mixture of Wal, Gahu, Bor and Watana		— Period V
10.	7929	Kardai	*Carthamus tinctorius*, L.	— Period V
19.	1105	—do—	—do—	— Period V
12.	3340	Lang	*Lathyrus sativus*, L.	— Period V
14.	3242	—do—	—do—	— Period V
17.	3691	—do—	—do—	— Period V
13.	2411	Jowar	*Andropogon sorghum*, (L) BROT.	— Period V
20.	5952	Gahu	*Triticum sp.*	— Period IV

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APPENDIX 7

A REPORT ON THE ANIMAL REMAINS OF THE NEVASA EXCAVATIONS

by

J. EAPEN

Department of Archaeology and Ancient History,
M. S. University of Baroda, Baroda.

The majority of the animal remains are of domestic animals, that of *Bos indicus* being by far the most predominant. The remains of goat (*Capra hircus aegagrus*) are fairly numerous. Unlike in the case of Nasik Excavations where they were numerous, pigs are practically absent. Only a tooth and a piece of jaw are found in the Nevasa Excavations. Both of these pieces come from the Indo-Roman period.

Among the wild animals, two members of the deer family, *Axis axis* and *Cervus duvaucelli* (Barasinga) are comparatively well represented. Remains of fish, reptile and bird have been recorded. The reptilian remains are mainly of the turtle *Chitra indica.*

Some of the pieces of antlers and bones of cattle and deer are found in charred condition. Whether these are the left-overs of food or sacrifical rituals is difficult to say.

The bone remains of the Chalcolithic period are mainly represented by the domestic cattle (*Bos indicus*) and the wild Barasinga (*Cervus duvaucelli*). Remains of goat and turtle are comparatively less. Few fragments of the bones of the other variety of deer (*Axis axis*) and rat have been found. The absence of pigs is rather surprising especially when Nasik, a not very far away site, yielded a large number of their remains. The finds from the Chalcolithic period are shown by asteriks, in the following list.

Finally mention may also be made of a fragment of a human right lower jaw which was found to be rather peculiar. The coronoid process, which is well preserved, is distinctly longer than the usual. It should be interesting to examine more human jaws excavated from that area[1].

The following are the animal remains studied:

*NVS	A(10)	2963	Antler of *Cervus duvaucelli*
*NVS	A(10)	2621	,, ,, ,, ,,
*NVS	A(10)	2621	,, ,, ,, ,,
*NVS	A(10)	2621	,, ,, ,, ,,
NVS	(2)	1515	Antler of *Axis axis*
*NVS	A(10)	2762	Antler of *Cervus duvaucelli*
*NVS	A(10)	2765	,, ,, ,,
*NVS	A(10)	2764	,, ,, ,,
*NVS	A(10)	2763	,, ,, ,,
NVS	B(4)	1808	Antler of *Axis axis*
NVS	A(6)	2036	Plastron of *Chitra indica*
NVS	A(6)	2042	,, ,, ,, ,,
NVS	A(6)	2036	,, ,, ,, ,,
NVS	A(6)	2002	,, ,, ,, ,,
NVS	A(6)	1917	,, ,, ,, ,,
NVS	A(6)	2002	,, ,, ,, ,,
NVS	A(6)	1917	,, ,, ,, ,,
NVS	A(6)	2079	,, ,, ,, ,,
NVS	A(6)	2084	,, ,, ,, ,,

1. The human remains have been examined by Prof. Dr. (Mrs.) Sophie EHRHARDT. above pp. 506-22.

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'Soak Pit' BD 5		Lower jaw fragment *Bos indicus*
*NVS C(9)	2233	" " " "
NVS	975	Lower part of metacarpal cannon bone of *Bos indicus*
*NVS D(12)	3740	Head of femur of *Bos indicus*
NVS	2390	Calcaneum of " "
*NVS 18	2390?	Astragalus of " "
*NVS A(9)	2332(d)	Fragment of Pelvic girdle (right side) (Acetabular region) of *Bos indicus*
*NVS A(9)	2332(c)	—do—
*NVS A(9)	2332(e)	Lower extremity of metacarpal cannon bone of *Bos indicus*
*NVS B(9)	3839(c)	Fragment of metatarsal cannon bone of *Bos indicus*
*NVS D(9)	3139	Lower jaw fragment of *Bos indicus*
*NVS A(9)	2332(b)	Fragment of pelvic girdle of *Bos indicus*
*NVS A(9)	2332(g)	Fragment of tibia of " "
*NVS B(9)	3839(j)	Fragment of humerus of *Bos indicus* (left side)
*NVS A(9)	?	Lower end of right radius of *Bos indicus*
*NVS	2390	Head of femur of *Bos indicus*
*NVS D(12)	3806	Upper end of right radius of *Bos indicus*
*NVS A(10)	2390	Fragment of upper jaw of *Bos indicus*
*NVS A(9)	2332(f)	Fragment of upper jaw of *Bos indicus*
NVS A(6)	1986	Front hoof of *Equs sabellus?*
*NVS D(12)	3599	Hoof (1 half each) of *Bos indicus*
* and A(4)	1668	
NVS	975	Fragments of metatarsal cannon bone of *Bos indicus*
*NVS B(9)	3896	Fragments of metacarpal cannon bone of *Bos indicus*
NVS A(8)	2208(b)	Astragalus of *Bos indicus*
NVS A(8)	2209(a)	Naviculo-cuboid of *Bos indicus*
NVS B(3)	1471	Upper molar tooth of *Bos indicus*
NVS C(7)	2220	Upper fragment of metatarsal cannon bone of *Bos indicus*
NVS A(6)	1984(a)	Fragment of femur of *Bos indicus*
NVS A(6)	1984	Lower fragment of metatarsal cannon bone of goat
NVS A(6)	?	Upper jaw fragment of *Bos indicus*
*NVS A(10)	2961	Unidentified fragments of bone
*NVS (9)	3882(c)	Lower fragment of metacarpal cannon bone of *Bos indicus*
*NVS (9)	3882(g)	Middle fragment of metacarpal bone of *Bos indicus*
*NVS (9)	3882(a)	Upper fragment of metacarpal of *Bos indicus*
*NVS A(10)	3185	Fragment of ulna of calf *Bos indicus*
*NVS (9)	3882(b)	Upper first premolar of *Bos iudicus*
*NVS (9)	3882(d)	Fragment of vertebra of *Bos indicus*
*NVS B	3902	Unidentified bone fragments
NVS A(6)	1980	Fragment of tibia of *Gallus domesticus* (with spur)
NVS A(6)	1998	Centrum of fish vertebra
NVS A(6)	1997	" " " "
NVS A(6)	2088	" " " "
*NVS B(9)	4011	Fragments of ribs of *Bos indicus*
NVS A(6)	1797	Lower incisor of *Bos indicus*
NVS A(6)	1973	Lower jaw fragment of *Capra hircus aegagrus*
NVS A(6)	2083(a)	" " " " " " "
NVS A(6)	2047	Phalanx of deer (*Axis axis*)
NVS A(6)	2086(b)	Right lower jaw fragment of cat
NVS A(6)	2083	Lower jaw fragment of *Capra hircus aegagrus* (goat)
NVS A(6)	2078	Tooth of *Sus cristatus* (Pig)
NVS A(6)	2043	Tooth fragments of *Bos indicus*

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ANIMAL REMAINS

NVS A(6)	1974	Fragment of antler of *Cervus duvaucelli*
NVS A(6)	1915	Jaw of a fish
NVS B(5)	2168	Lower fragment of left humerus
NVS B(3)	1372	Isolated molar teeth of *Bos indicus*
NVS B(3)	1308	A piece of a bone implement (a comb)
NVS B(3)		Incisor tooth of *Capra hircus aegagrus*
NVS (1)	420	Horn core of *Capra hircus aegagrus*
NVS D(7)	4685	Left lower jaw fragment „
NVS D(7)	2399	Lower jaw fragment of *Bos indicus*
NVS (1)	189	Skull of rat (*Mus Sp.*)
NVS D(7)	2247	Jaw fragments of *Bos indicus*
NVS D(7)	2377	Molar tooth of *Bos indicus*
NVS5D(7)	2381	Lower jaw fragment of „
NVS	43	Right lower jaw fragment of dog
*NVS D(9)	3224	Lower incisor tooth of *Capra hircus aegagrus*
NVS D(1)	211	Tibia fragment of *Mus sp.*
NVS (1)	35	Molar tooth of goat
NVS	140	„ „ „ „
NVS (1)	415	Incisor tooth of *Bos indicus*
NVS (1)	412	Molar tooth of dog
NVS (2)	823(a) to (h)	Molar teeth of *Equs caballus*
NVS	2332(a)	Fragment of jaw of *Bos indicus*?
NVS B(4)	1949	Fragment of lower jaw of goat or sheep
NVS	3802(B)	Lower fragment of metatarsal of *Bos indicus*
NVS B(4)	(C)	Lower jaw fragment of „ „
NVS B(4)	(D)	„ „ „ „ „ „
NVS B(4)	(E)	Fragment of femur of „ „
NVS B(4)	(H)	Upper fragment of metacarpal of goat or sheep
NVS B(6)	3658	Lower jaw fragment of *Bos indicus*
NVS B(8)	3653	„ „ „ „ „ „
NVS B(5)	2112	Plastron fragment of *Chitra indica*
NVS D(6)	2319	Lower jaw fragment of *Bos indicus*
NVS D(6)	2117	Molar tooth of „ „
NVS D(6)	2320	Lower jaw fragment of „ „
NVS D(6)	3378	Molar tooth of goat or sheep
*NVS A(9)	2311	Left lower jaw of *Rattus rattus* (rat)
*NVS A(10)	2311(c)	Left femur of „ „
*NVS A(10)	2311(a)	Fragment of right femur of „ „
*NVS A(9)	2311(a)	Right humerus of „ „
*NVS A(9)	2311(f)	Left humerus of „ „
NVS A(8)	3211(b)	Right humerus of „ „
*NVS A(10)	3847(a)	Lower fragment of tibia of *Bos indicus*
*NVS A(10)	3947	Lower jaw fragment of *Bos indicus*
NVS A(6)	2416	Fragment of femur of „ „
NVS A(7)	2085	Thoracic vertebra of „ „
NVS A(2)	814	Skull of *Mus rattus*
NVS B(4)	1710	Molar tooth of *Bos indicus*
NVS B(4)	2008	„ „ „ „ „
NVS (1)	11	„ „ „ „ „
*NVS A(9)	2245	„ „ „ „ „
NVS A(8)	2193	„ „ „ „ „
NVS B(4)	1715	„ „ „ „ „
NVS B(8)	3803	„ „ „ „ „

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NVS B(4)	1774	Molar tooth of *Bos indicus*
NVS A(2)	946	Incisor tooth of *Bos indicus*
*NVS B(9)	3839	Fragment of right lower jaw of *Bos indicus*
NVS A(3)	1595	Fragment of right lower jaw of „ „
*NVS A(9)	2259/1-12	Unidentifiable bone fragments
NVS B(6)	2571	Mangum of *Bos indicus*
NVS B(6)	2576	Molar tooth of „ „
NVS B(6)	2420	„ „ „ „ „
NVS B(6)	2384	„ „ „ „ „
NVS B(8)	2421	Molar tooth of *Capra hircus aegagrus*
NVS B(6)	2517	Astragalus of „ „ „
NVS (6)	2288	Unidentifiable bone fragment
NVS B(6)	2229	Premolar of man
NVS B(6)	2263	Jaw bone of fish
*NVS B(10)	710	Plastron fragment of *Chitra indica*
*NVS D(10)	3263	Incisor tooth of *Bos indicus*
NVS B(7)	2808	Left lower jaw fragment of *Axis axis*
NVS B(7)	3493	Inciser tooth fragment of goat or deer
NVS B(7)	2835	Bone 'arrow head'
NVS B(7)	3003	Molar tooth of *Bos indicus*
NVS B(7)	3002	„ „ „ „ „
NVS B(7)	2579	„ „ „ „ „
NVS B(7)	2578	„ „ „ „ „
NVS B(7)	2846	„ „ „ „ „
NVS B(7)	2809	„ „ „ „ „
*NVS A(10a)	3125	Lower jaw fragment of *Capra hircus aegagrus*
*NVS A(10a)	3191	Antler fragment of *Axis axis*
*NVS A(10a)	3610	Molar teeth of „ „
*NVS A(10a)	3735(c)	Proximal phalanx of the 5th finger (hand) of man
*NVS A(10a)	3293	Molar teeth of *Bos indicus*
*NVS A(10a)	3735D	Premolar of „ „
*NVS A(10a)	3735E	Proximal phalanx of 1st digit (hind limp) of *Cervus duvaucelli*
*NVS A(10a)	3735A	Rib fragment of *Bos indicus*
NVS D(5)	2030	Antler fragments of *Axis axis*
NVS D(5)	1824	Lower jaw fragment of „ „
NVS D(6)	2330	Molar tooth of *Bos indicus*
NVS D(48)	2173	Plastron fragment of *Trionyx gangeticus*
NVS D(6)	2321	Lower jaw fragment of *Sus cristatu*
NVS D(5)	3165	Upper molar tooth of *Axis axis*
NVS D(5)	2030	Unidentifiable bone fragment
NVS D(5)	2691	Fragment of vertebra?
NVS A(6)	2081	Fish vertebra
NVS A(6)	2037	Upper jaw fragment of *Bos indicus*
*NVS C(9)	2234	Fragment of right frontal bone of *Bos indicus*
NVS A(8)	2208(a)	Molar tooth of *Bos indicus*
NVS A(8)	2208	„ „ „ „ „
NVS A(8)	2208(f)	Incisor tooth of „ „
NVS A(8)	2208(l)	Unidentifiable bone fragment
NVS A(8)	2208(g)	A fragment of the lower part of the metacarpal cannon bone of *Bos indicus*
NVS A(8)	2208(b)	Molar tooth of *Bos indicus*
NVS A(8)	2208(d)	Premolar tooth of „ „
NVS A(8)	2208(e)	„ „ „ „ „

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*NVS	B(9)	3818,3819/3	Fragment of upper jaw of *Bos indicus*
NVS	B(9)	3818,3819/9	Molar tooth of *Bos indicus*
NVS	B(9)	3818,3819/2	Fragment of rib of " "
*NVS	B(9)	3818,3819/1	" " " " " " "
*NVS	B(9)	3818,3819/7	Incisor tooth of " "
*NVS	B(9)	3818,3819/4	Calcaneum of " "
*NVS	B(9)	3818,3819/10	Incisor tooth of " "
*NVS	B(9)	3818,3819/8	Fragment of rib of " "
*NVS	B(9)	3818,3819/11	Upper end of the tibia of an unidentified small mammal
*NVS	B(9)	3818,3819/6	Rib of an unidentified small mammal
NVS	A(7)	2185	Upper jaw fragment of *Axis axis*
NVS	A(7)	2182	Molar tooth of *Bos indicus*
*NVS	C(8)	2155	Fragment of molar tooth of *Bos indicus*
NVS	A(7)	2128	Molar tooth of *Bos indicus*
*NVS	A(9)	233	Facial part of the skull with incisor of *Rattus rattus*
NVS	(2)	809	Skull of *Rattus rattus*
NVS	C(6)	1962	Rib of unidentified small mammal
NVS	C(6)	1964	" " " " "
NVS	A(8)	2209(c)	Premolar of *Bos indicus*
NVS	(3)	1461	Object made of animal material (bone or horn)
NVS	(1)	118	Object made of bone
NVS	A(8)	2209	A fragment of pelvic girdle of *Bos indicus*
*NVS	A(10)	3279	Upper fragment of tibia of " "
*NVS	A(9)	2311(j)	" " " " " " " "
*NVS	A(9)	2811(g)	Left jaw fragment of dog (without teeth)
NVS	A(6)	2044	Unidentified bone fragment
NVS	B(7)	2648	Incisor tooth of *Axis axis*
*NVS	A(9)	2311	Lower jaw fragment of puppy
NVS	B(6)	2230	Right lower jaw fragment of man with pronounced coronoid process and 3rd molar.
*NVS	A(9)	2311(c)	Astragulus of goat or sheep
*NVS	A(9)	2311	i,h,t,x,m,n,u,q,k,s,l,w,v, bone fragments of *Bos indicus*
*NVS	A(9)	230	Proximal part of the antler of *Axis axis*
NVS	A(4)	1705	Lower jaw fragment of *Mus rattus* (rat)
NVS	(5)	2190	Lower jaw fragment of *Axis axis*
NVS	(5)	3222	Lower jaw fragment of *Varanus monitor*
*NVS	A(10)	3185	Molar tooth of *Bos indicus*
NVS	A	100	Incisor tooth of " "
*NVS	A(9)	2386	Lower fragment of metacarpal cannon bone of *Bos indicus*
*NVS	A(10a)	3185	Fragment of femur of *Bos indicus*
*NVS	A(9)	2386/11	Patella of *Bos indicus*
*		/14	" " " "
*NVS	A(9)	2386/1	Unidentified bone fragment
NVS	D(5)	1992	Incisor tooth of *Bos indicus*
*NVS	C(10)	2796	Lower jaw fragment of *Axis axis*
*NVS	D(12)	3598	" " " " " "
*NVS	A(9)	2386/2	Fragment of vertebra of *Bos indicus*
*NVS		2390	Unidentified bone fragment
*NVS	A(9)	716	Coral
NVS	B(2)	712	Cuttle of cuttle fish
*NVS	A(9)	2386/21	Unidentified bone fragment
NVS		/29	" " "
NVS	B(2)	1514	Fragment of lower jaw of cat

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NVS B(2)	1525	Molar teeth of *Bos indicus*
*NVS (9)	2225(c)	Calcaneum of ,, ,,
NVS (1)	122	Molar tooth of ,, ,,
NVS B(2)	1523	,, ,, ,, ,, ,,
NVS B(2)	1083	,, ,, ,, ,, ,,
*NVS A(9)	2386	,, ,, ,, ,, ,,
NVS A(3)	1601	Fish bone
*NVS D(12)	3808	Lower fragment of humerus of *Bos indicus*
*NVS (3)	1104	Canine tooth of dog
(2)	576	Incisor tooth of *Bos indicus*
NVS (2)	1044	Lower jaw fragment of *Bos indicus*
*NVS C(9)	2216	Unidentified bone fragment
*NVS A(9)	2386	,, ,, ,,
*NVS (9)	3882	,, ,, ,,
*NVS A(9)	2386/3	,, ,, ,,
NVS (2)	864	Skull of hawk
*NVS A(9)	2311	Unidentified bone fragment
*	2390/32	,, ,, ,,
*	2390/3	,, ,, ,,
*NVS A(9)	2386/10	Unidentified bone fragment
*	2390/32	,, ,, ,,
*	2390/3	,, ,, ,,
*NVS A(9)	2386/10	,, ,, ,,
*NVS A(10a)	3185	,, ,, ,,
*NVS A(9)	2386/8	Upper fragment of metacarpal cannon bone of *Bos indicus*
*NVS (9)	3882	Unidentified bone fragment
*NVS	3802	,, ,, ,,
*NVS	2390/45	,, ,, ,,
*NVS	2390/11	,, ,, ,,
*NVS	2390/27	,, ,, ,,
*NVS A(9)	2380/15	,, ,, ,,
NVS B(2)	1519	Proximal phalanx of *Bos indicus*
	2390/21	,, ,, ,, ,, ,, (hind limb)
	2390/21	,, ,, ,, ,, ,, (fore limb)
	2390/46	Unidentified fragment of bone
	2390/47	Lower fragment of metacarpal of goat or sheep
*NVS A(9)	2386/12	Unidentified fragment of bone
*	2386/19	,, ,, ,, ,,
*	2386/13	,, ,, ,, ,,
*	2386/10	,, ,, ,, ,,
*	2390/22	,, ,, ,, ,,
NVS (2)	1008	Skull fragment of dog
*NVS A(10a)	3185	Tibia of *Rattus rattus*
NVS (6)	2416(a)	Unidentified bone fragment
NVS B(2)	982	,, ,, ,,
NVS B(6)	230	Jugal bone of cat
NVS A(7)	2130	Unidentified bone fragment
	2390/36	,, ,, ,,
	2390/40	,, ,, ,,

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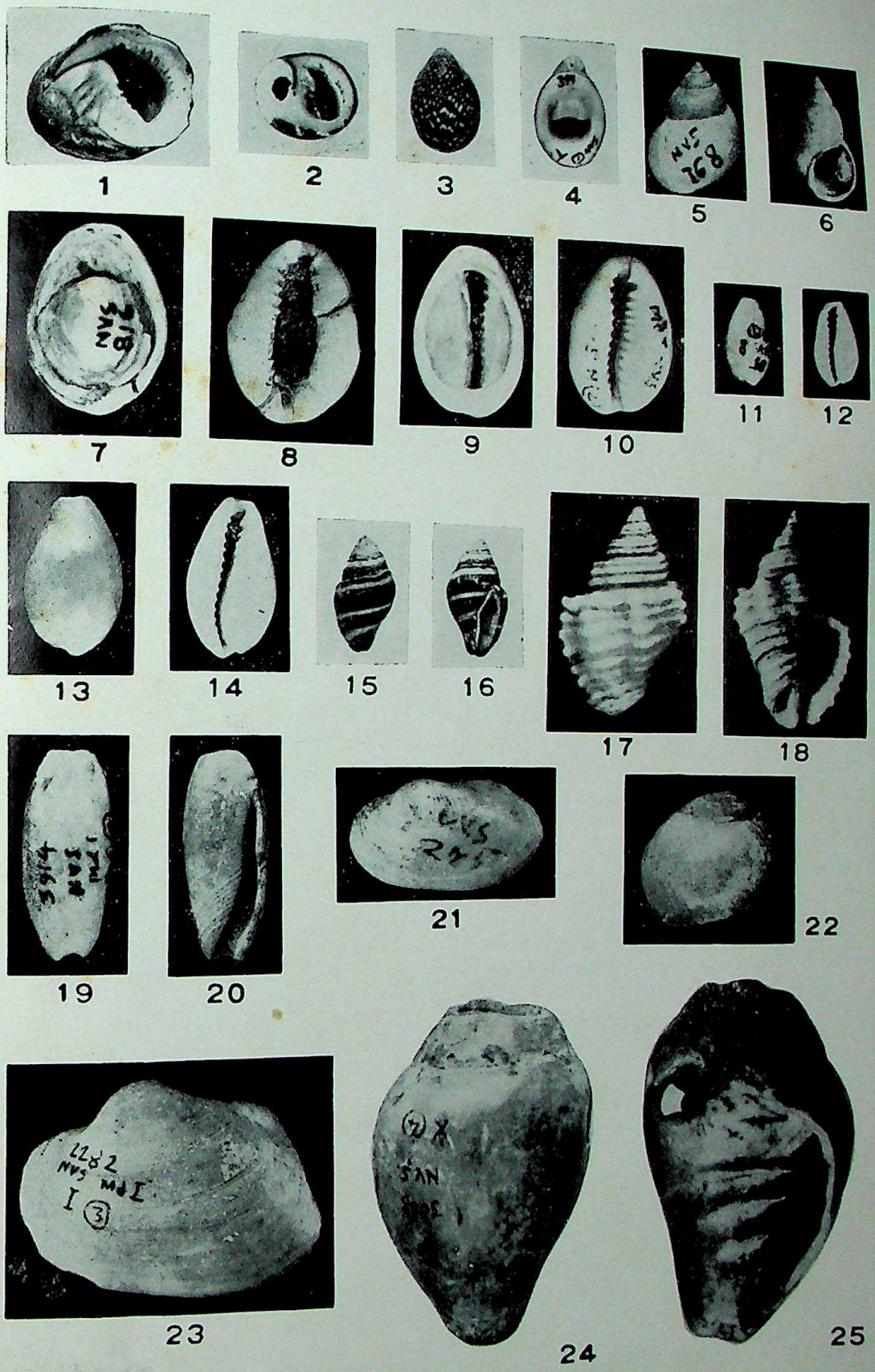

Fig. 212 Shell Remains from Nevasa Excavations *(See pp. 539-549)*

Fig. 213 Shells Remain from Nevasa Exca"ations See pp. 539-549)

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APPENDIX 8

SHELL REMAINS FROM NEVASA EXCAVATIONS, MULLUSCA: GASTROPODA AND BIVALVIA

by

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SUMMARY

[The study of shells from Nevasa Excavations by Dr. H. C. RAY shows how some types were used for ceremonial purposes while others—such as *Lamellidens marginalis*, a kind of mussel—might have been used as food, some shells for ornament and some as spoons in the Chalcolithic Period (III). These people might also have eaten another shell-fish called *Olivancillaria* (*Agaronia*) *neubulosa*.]

INTRODUCTION

The present paper is based on the study of a collection of molluscan shells recovered along with other animal remains from the excavations at Nevasa, Maharashtra State (formerly Bombay State), carried out by the Deccan College Research Institute, Poona, and submitted to the Zoological Survey of India, Calcutta, by Dr. S. B. DEO, Reader in Ancient Indian History, Deccan College Research Institute, Poona, for identification and report. When requested to supply further information about them, the latter kindly favoured me with the following note:—

> "The animal remains were few. Most of these consisted of bovine teeth. Nevasa is in Ahmednagar District, Bombay State. It is about 150 miles to the north-east of Bombay as the crow flies". (*vide* his letter reference No. 701(i)-7621, dated 3rd November, 1959).

The collection, though small and comprising only fourteen species of Gastropods and Bivalves (—Pelecypods) mostly of recent origin, appears worthy of record for two main reasons, *i.e.* firstly, it includes representatives of different groups of molluscs, such as, marine, brackish, freshwater and terrestrial—all the forms of which available here are not known to have hitherto been recorded from any other excavations in India; secondly, while considerable progress has been made in other advanced countries of the world relating to the study of shells discovered in the Prehistoric graves, tombs and other excavations along with the remains of animals showing chronological or cultural significance or even age estimation of the earth (MULVANEY, 1959), our knowledge in the subject appears too meagre, though the vast field

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is lying before us to explore and study. In this respect JACKSON (1917) provides valuable information in his book on "*Shells as evidence of the migrations of early culture*" indicating the source of collection and varied uses of shells, such as, currency, amulets, charms, triumpets, ornaments, symbol of messages, etc. PLATT (1949) gives a nice display of shells used for decorative, ornamental and inlaying purposes.

SEWELL (1931) was the first to give a true systematic account of excavation shells found in India showing only ten species in his report on zoological remains from Mohenjo-daro in Sind. The next in order and importance was that by PRASHAD (1936) dealing with only five species in the report on animal remains from Harappa—another old site in the Punjab well-known for similar tradition and culture. Besides these, NATH (1958) has included three species in his list of the animal remains obtained from the excavations at Saranath, U.P., while RAY and IIENGAR (1955) have shown seventeen species in the report of the excavations at Nasik and Jorwe, Maharashtra State. HORNELL's treatment of the collection of shells (1913, 1914, 1916) discovered by Mr. Bruce FOOTE in the excavations in Kathiawar, Gujerat and Deccan along with the Pre. historic and Proto historic antiquities (preserved in the Madras Government Museum) may be encouraging, but he seems to have paid more attention to their uses than to proper systematics.

There are thirty-six specimens in the collection under study representing fourteen species, *i.e.*, eight marine, one brackish, four freshwater and one terrestrial, belonging to fourteen genera and eight families. In most cases these are found to be more or less worn and broken or otherwise damaged, as is natural with the excavation material.

The existence of a naked columellar piece, a sawn 'shoulder-piece' and a shell of chank in the collection (with the apex smashed resulting in the formation of a tubular cavity there)—all appearing to represent typical *pyrum*, provides convincing evidence that chank bangle factories were located in the area and its inhabitants very efficient and skilful in shell-cutting and manufacturing chank bangles and other shell-ornaments. Moreover, the smashed apex of the shell indicates that the peoples were of religious temperament and used such shells for the purpose of blowing during *puja*, marriage and other auspicious ceremonies. Besides, they might have used them as amulets or charms also. SEWELL (1931) recorded two varieties of *Turbinella pyrum* from Mohenjo-daro, namely, *acuta*, HORNELL and *fusus* SOWERBY, and indicated the importance of this shell-fish and the conditions in which the chank bangle-making industry flourished there. But the most comprehensive accounts on Indian chanks are published by HORNELL (1913, 1914, 1916, 1921, 1951) dealing with their bionomics and lifehistory, fishing and fishery, chank bangle industry, role in religion and life of the people of India, etc. It is interesting to learn that the bangle industry flourished in ancient times in three great centres, namely, Kathiawar, Gujerat and Deccan. But when disappeared completely from there, it flourished again at Dacca in East Bengal—the only centre now in India where very high class and costly bangles of various designs and patterns and other shell-ornaments are made by skilled artisans. The chanks are now-a-days found in the Andaman Sea, Palk Bay, Gulf of Mannar, near the Tinnevelly District, off the coast of Kathiawar and Gulf of Kutch.

Besides *Xancus* (—*Turbinella*) *pyrum*, some other species also occur in the collection, such as, *Viviparus bengalensis*, *Ornamentaria annulus*, *Monetaria moneta*, *Lamellidens marginalis* and *Potomida* (—*Parreyssia*) *favidens*, which are known to exist in India since the Prehistoric days and play an important role in the field of economy and religion.

Lastly, I express my grateful thanks to Dr. M. L. ROONWAL, Director, Zoological Survey of India, Calcutta, for the trouble taken in going through the manuscript and offering his valuable suggestions.

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SHELL REMAINS

SYSTEMATICS

GASTROPODA

Family NERITIDAE

Nerita (Theliostyla) chamaeleon (LINNAEUS, 1758).

Fig. 212, Nos. 1, 2

1758 *Nerita chamaeleon*, LINNAEUS, *Syst. Nat.* ed. X, p. 779, No. 644.

1938 *Nerita (Theliostyla) chamaeleon*, ADAM ET LELOUT, *Mem. Mus. Roy. Hist. Nat. Belg. Hors Ser.*, II, *Fasc.* 19, p. 50, pl. iv, fig. 3.

No. 127 Trench H, Layer (1)
No. 145 Trench F, Layer (1a).
No. 268 Trench B, Layer (2).
No. 273 Trench B, Layer (2).
No. 274 Trench B, Layer (2).
No. 4636 Trench I, Layer (2).
No. 5254 Trench H, Layer (5).

The first two belong to Period VI and the rest to Period V.

All the seven specimens in the collection appear to agree with the description and figure of the greatly variable species *chamaeleon*. The largest shell *Fig. 212, No. 1* measures 23.5 mm. in length and 21 mm. in diameter, while the smallest one (*Fig. 212, No. 2*) measuring 12 mm. in length and 15 mm. in diameter. But in case of the latter the entire ventral surface (including the columella) appears to have been purposely rubbed down so as to make it more smooth and polished possibly for its use as an ornament or amulet. A similar shell is figured by HORNELL in pl. xvi, No. 2783_{13} (middle row, 1913) and pl. v (fig. No. and position same, 1914) marking it for *Nerita* only under the heading "Ancient shell ornaments".

Distribution This is a rock-dwelling marine mollusc found widely distributed throughout the Indo-Pacific.

Neritina (Dostia) crepidularia (LAMARCK, 1822).

Fig. 212, Nos. 3, 4

1822 *Neritina crepidularia*, LAMARCK, *Hist. Nat. Anim. Sans Verteb.* VI(2), p. 186.

1929 *Neritina (Dostia) crepidularia*, THIELE, *Handb. der Syst. Weichtierk.* 1, p. 75.

No. 139 Trench F, Layer (1a).
No. 205 Trench D, Layer (1).
No. 349 Trench D, Layer (1).
No. 399 Trench Y, Layer (1).

All belong to Period VI.

All the four shells in the collection show very close resemblance to the figure of *crepidularia* given by SUBRAHMANYAM, KARANDIKAR and MURTI (1952) in their peculiar crepidula-like form and other characters. The largest specimen (*Fig. 212, Nos. 3, 4*) measures 18.5 mm. in length and 14 mm. in diameter, while the smallest one measuring 16 mm. in length and 11 mm. in diameter.

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Like the preceding species, its shells may also be used for ornamental or decorative purposes.

Distribution This brackish water species is quite common throughout India. But beyond that region, its range also extends as far as Natal in the west and Japan and Queensland in the east.

Family VIVIPARIDAE

Viviparus bengalensis mandiensis (KOBELT, 1909).

Fig. 212, Nos. 5, 6

1909 *Vivipara bengalensis* var. *mandiensis*, KOBELT, *in Martini and Chemnit 's Syst. Conch.-Cab.* 1, *Abth.* 21, *Pt.* II, p. 414, pl. lxxvii, figs. 8-10.

1921 *Vivipara bengalensis* race *mandiensis*, ANNANDALE, *Rec. Ind. Mus.* XXII, pp. 271, 272, pl. i, figs. 4, 10.

No. 124 Trench H, Layer (1).

No. 168 Trench C, Layer (1),

No. 228 Trench B, Layer (1).

No. 5237 Trench H, Layer (5).

The first three belong to Period VI and the last to Period V.

The specimens are found to agree with the description and figures of the race *mandiensis* given by ANNANDALE. The largest example (*Fig. 212, Nos. 5, 6*) measures 24 mm. in length and 15.5 mm. in diameter, while the smallest one measuring 15 mm. in length and 11.5 mm. in diameter.

Distribution The race *mandiensis*, according to ANNANDALE, is confined to north-western India. But its occurrence in Santal Parganas, Bihar (RAY, 1943), certainly exceeds the eastern limit beyond Allahabad. PRASHAD while recording it from Harappa writes (1936, p. 4): "It is apparently of quite recent origin and may have been washed in with inundations from the Ravi River".

Family CYPRAEIDAE

Ornamentaria annulus scutellum (SCHILDER and SCHILDER, 1937).

Fig. 212, Nos. 7-10

1937 *Monetaria* (*Ornamentaria*) *annulus* race *scutellum*, SCHILDER and SCHILDER, *Proc. Zool. Soc. London*, II, pp. 1127, 1131, 1133, pl. 1, figs. 15, 18.

1946 *Ornamentaria annulus scutellum*, STEADMAN and COTTON *Rec. S. Austr. Mus. VIII* (3), pp. 510, 523.

No. 125 Trench H, Layer (2).

No. 816 Trench A, Layer (2).

Both belong to Period V.

Of the two shells, the large and adult one (*Nos. 7, 8*) measures 26.5 mm. in length, 20.5 mm. in diameter and 14.5 mm. in height, while the small one (*Nos. 9, 10*) measuring 24 mm. in length and 17 mm. in diameter. The latter is vaultless and seems to have been done so purposely by rubbing down the back possibly for using it as an ornament or amutlet.

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A similar shell of *Cypraea annulus*, the 'Ring Cowry', is figured by HORNELL in pl. xvi, No. 345613 (middle row, 1913), and pl. v (number and position same, 1914) indicating its use as an ornament, though wrongly considered as of *C. moneta*. JACKSON (1917, pp. 128, 129) also cites instances relating to the occurrence of vaultless shells of *C. annulus* in the Pre-dynastic burials and tombs explored in different parts of Egypt and Nubia and indicates their use as ornaments or amulets or charms. He further shows such shells strung together (p. 162) and used by the West African tribes as symbol of messages (pp. 161, 163) for conveying their significant ideas, good or bad, from one person to the other.

Distribution The race *scutellum* seems to be confined to the western part of the Indo-Pacific only.

Monetaria moneta moneta (LINNAEUS, 1758)

Fig. 212, Nos. 11, 12

1923 *Cypraea moneta*, VAYSSIERE, *Ann. Mus. Nat. Hist. Marseille—Zool.* XVIII, p. 42 p. vii, fig. 90.

1956 *Monetaria moneta moneta*, ALLAN, *Cowry Shells of World Seas, Georgian House, Melbourne*, p. 99.

No. 85 Trench F, Layer (1).
No. 85a Trench F, Layer (1).
Both belong to Period VI.

Only two juvenile shells of cowry are found representing the post-bulla state. I assign them, with some hesitation, to typical *moneta*, the well-known 'Money Cowry', in view of their close resemblance to Vayssiere's fig. 90. The large specimen (*Nos. 11, 12*) measures 12.5 mm. in length, 8 mm. in diameter and 6 mm. in height, while the small one measuring aa mm. n length, 7 mm. in diameter and 5.5 mm. in height.

Distribution The range of this cowry and its usefulness are indicated in my papers (1945, 1951).

Gratiadusta pallida pallida (GRAY, 1824)

Fig. 212, Nos. 13, 14

1824 *Cypraea pallida*, GRAY, *Zool. Journ.* I, p. 387.

1946 *Gratiadusta pallida pallida*, STEADMAN and COTTON, *op. cit.*, p. 517.

No. 1331 (large)
No. 1704 Layer (4)—small. Period V.

Both the shells appear quite typical of the race *pallida* as regards their pyriform shape, elevated back, more rounded and thickened right side and posteriorly sinuous aperture. The large specimen measures 25.5 mm. in length, 17 mm. in diameter and 13.5 mm. in height, while the small one (*Nos. 13, 14*) measuring 22 mm. in length, 13.5 mm. in diameter and 10 mm. in height.

Distribution This cowry is found quite common in the Indian Seas. But its range is known to extend eastwards as far as Malacca and Siam (SCHILDER, and SCHILDER 1952). NATH (1958) records it from the excavations at Sarnath, while RAY and IENGAR (1955) from those at Nasik and Jorwe.

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Family BUCCINIDAE

Engina (*Engina*) *mendicaria* (LINNAEUS, 1758).

Fig. 212, Nos. 15, 16

1758 *Voluta mendicaria*, LINNAEUS, *Syst. Nat. ed. &*, p. 731, No. 360.
1929 *Engina* (*Engina*) *mendicaria*, THIELE, *op. cit.*, p. 311.
No. 4300 Trench E, Layer (4), Period V.

The single shell before me appears young from the less thickened outer lip (internally) and less strong teeth developed in its middle. But its ovate shape, dark-brown colour colour and broad somewhat conspicuous yellowish-white revolving bands on the whorls strongly suggest that it belongs to typical *mendicaria*. It measures 17.5 mm. in length and 10 mm. in diameter.

Distribution *E. mendicaria* is a wide-spread Indo-Pacific species.

Cantharus (*Cantharus*) *spiralis* (GRAY, 1839)

Fig. 212, Nos. 17, 18

1939 *Pollia spiralis*, GRAY, *Zool. Beechey's Voy. Moll.*, p. 111.

1942 *Cantharus* (*Cantharus*) *spiralis*, GRAVELY, *Bull. Mad. Govt. Mus. N.S., Nat. Hist. Sec.* V(2), pp. 55, 99.

No. 5296 Trench H, Layer (5), Period V.

The single specimen in the collection appears to agree perfectly with the description and figure of *spiralis* given by REEVE (1846). It measures 33 mm. in length and 22 mm. in diameter.

HORNELL writes about the economic importance of this shellfish (1951, p. 28): "*Pollia* (*Pollia*) *spiralis* is a minor sea product collected for food on Konkan coast".

Distribution This species is known to occur only in Mauritius, Bombay and Madras.

Family OLIVIDAE

Olivancillaria (*Agaronia*) *nebulosa* (LAMARCK, 1822)

Fig. 212, Nos. 19, 20

1822 *Oliva nebulosa*, LAMARCK, *Hist. Nat. Anim. Sans Verteb.* VII, p. 436.

1948 *Olivancillaria* (*Agaronia*) *nebulosa*, RAY, *Rec. Ind. Mus.* XLVI, pp. 106-107.

No. 3914 Trench E, Layer (4)
No. 4406 Trench X, Layer (4)
No. 6569 Trench F, Layer (8)
No. 7900 Trench F, Layer (12) —smallest.

Of these the first belongs to Period V, the second and third to Period IV, and the last to Period III, respectively.

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The smashed apex in all the four shells indicates that it has been done so purposely for using them as ornaments or amulets. But in other respects they conform to the description and figures of *nebulosa* given by REEVE (1850). The largest shell (*Nos. 19,20*) measures 30 mm. in length and 14 mm. in diameter, while the smallest one measuring 16 mm. in length and 6 mm. in diameter.

This shell-fish may have also food value like *O. gibbosa*, its close ally.

Distribution *O. nebulosa* is a very common species found on the sandy shores of Indian Seas. But beyond that region, its range extends even to Ceylon, Byikhwaaw Bay, Torres Strait and Gulf of Siam.

Family XANCIDAE

Xancus pyrum pyrum (LINNAEUS, 1767).

Fig. 212, Nos. 24, 25; Fig. 213, Nos. 3-5

1767 *Voluta pyrum*, LINNAEUS, *Syst. Nat.* ed. XII, p. 1195, No. 433.

1939 *Xancus pyrum pyrum*, WINCKWORTH, *Proc. Malac. Soc. London*, XXIII, pp. 345-347.

No. 3068 Trench X, Layer (4),
No. 4974 Trench Y, Layer (1),
No. 6607 Trench H, Layer (8),
Of these the first and last belong to Period IV and the middle one to Period VI.

All the three specimens in the collection, though representing typical *pyrum*—the most well-known and highly esteemed Sacred Chank of India, are found in such precarious conditions as rendering their proper identification too difficult:—

First one (No. 3068, *Nos. 24,25*)—a very worn and bleached young shell with the apex smashed possibly for the purpose of blowing or using it as an amulet or charm. It measures 57 mm. in length and 41 mm. in diameter. The three columellar folds appear quite strong and well-developed.

Second one (No. 4974, *Fig. 213, No. 3, 4*)—a sawn 'shoulder-piece' of an adult shell measuring 93.5 mm. in length and 53.5 mm. in diameter. The nature and extent of oblique cut on the bodywhorl indicates that the upper whorls have been removed by expert shell-cutters possibly for making chank bangles and other ornaments. HORNELL demonstrates such 'shoulder-pieces' in pl. xiii, fig. 2 (bottom row, 1913), pl. vi, fig. 2 (same row, 1914) and pl. vi, fig. 3 (same row, 1916), which he obtained from the chank workshop at Dacca in connection with his study of a collection of chank shell waste unearthed at Korkai and Kayal (1913, pp. 408, 410; 1914, pp. 45, 46; 1916, p. 62)—two famous Tamil cities (at the mouth of the Tambraparni river) which flourished in chank bangle industry in the early periods of the Christian era, but now represented by mounds of rubbish only. Here also the columella bears three well-developed folds.

Third one (No. 6607, *Fig. 213, No. 5*)—a naked columellar piece—the sole remnant of a large and well-developed chank shell appearing to have been completely smashed or otherwise damaged. It measures 84.5 mm. in length and bears on the oral part three very

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worn out and indistinct folds. Similar fragments of chank columellas are figured by HORNELL in pl. xiii, No. 2 (middle row, 1913), pl. vi, No. 2 (same row, 1914) and pl. vi, No. 3 (same row, 1916), based on the collection he discovered at Korkai and Kayal along with the sawn 'shoulder-pieces'. Such columellar pieces, says HORNELL (1913, p. 413), "are used by same hill tribes in N.E. India as ear or hair ornaments". But the beads made from the same may also be used as necklace and bracelet amulets or for ornamental purposes.

Triplicate columella, as pointed out by VREDENBURG (1916) and WINCKWORTH (1939) is the most characteristic feature of typical *pyrum*. All the three pieces before me possess this essential feature and represent the dextral type of shell so common in the Indian Seas, though not the sinistral or abnormal one occurring so infrequently and hence commanding an unusually high rate. The latter is considered more auspicious and holy by the Hindus, Buddhists and Tibetans, and kept as libation vessel for Gods in temples or places of worship.

Distribution Typical *pyrum*, according to WINCKWORTH (1939, p. 345—*foot-note*, is "confined to the Tranquebar coast from Adam's Bridge northwards". But MELVILL and ABERCROMBIE (1893) as well as SUBRAHMANYAM, KARANDIKAR and MURTI (1952) have reported it from Bombay also. Besides, its occurrence in the Obligocene times is indicated by VREDENBURG (1916).

Family ARIOPHANTIDAE

Xesta semirugata (BECK, 1837)

Fig. 212, No. 22

1837 *Galaxis semirugata*, BECK, *Index Moll. Crist. Fred.*, p. 42.

1876 *Helix semirugata*, HANLEY et THEOBALD, *Conch. Ind.*, p. 27, pl. lix, fig. 4.

No. 522 Trench B, Layer (2), Period V.

I assign, without any hesitation, the single land shell before me to the greatly variable species *semirugata*. It measures 25 mm. in length and 25.5 mm. in diameter.

Distribution For a detailed distribution of this land snail, BLAND FORD and GODWIN-AUSTEN'S paper may be consulted (1908).

BIVALVIA

Family UNIONIDAE

Indonaia caerulea (LEA, 1834)

(*Fig. 212, No. 21*)

1834 *Unio caeruleus*, LEA, *Trans. Amer. Phil. Soc.* IV, p. 95, pl. xiii, fig. 25.

1918 *Indonaia caerulea*, PRASHAD, *Rec. Ind.Mus.* XV, p. 147.

No. 275 Trench B, Layer (2), Period V, (Complete shell).

No. 1177 Trench X, Layer (4), Period IV (left valve only).

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Both the specimens (one complete shell and one left valve) agree perfectly with the description and figure of typical *caerulea*—one of the common freshwater mussels of India. The complete shell (*No. 21*) measures 33 mm. in length, 11.5 mm. in diameter and 15.5 mm. in height.

Distribution PRESTON mentions the localities of its distribution in India (1915).

Lamellidens marginalis (LAMARCK, 1819)

Fig. 213, Nos. 1, 2

1921 *Lamellidens marginalis*, PRASHAD, *Rec. Ind. Mus.* xxii, pp. 606, 607, Text-fig. 29A.

No. 8310 Trench F, Layer (12), Period III.

Only the left valve of an adult shell is found in the collection representing the well-known species *marginalis* which grows to a fairly large size among the common freshwater mussels of India. It measures 94 mm. in length and 50 mm. in height.

Distribution This mussel is very widely distributed throughout India, Burma and Ceylon, and beyond that, its range is also known to extend to Java. SEWELL (1931) recorded its occurrence in Mohenjo-daro, while PRASHAD (1936) in Harappa along with *Parreyssia favidens* giving an interesting remark (p. 4): "The two species of freshwater mussels are undoubtedly of the same age as the other remains of animals from Harappa, and probably the shells of these mussels were used by the inhabitants either for ornamental purposes or as spoons, scrapers, etc.". But I think that they also utilized the shell-fish, *L. marginalis*, as food and the pearls it produces for ornamental and other purposes.

Potomida corrugata (MULLER, 1774)

var. *nagpoorensis* (LEA, 1859)

Fig. 212, No. 23

1859 *Unio nagpoorensis*, LEA, *Proc. Acad. Nat. Sci. Philadelphia*, III, p. 331.

1915 *Parreysia* (*Parreysia*) *corrugata* var. *nagpoorensia*, Preston, p. 157.

No. 2282 Trench I, Layer (3), (*Left valve*).

No. 2450 Trench I, Layer (3), (*Right valve*).

Both belong to Period IV.

Two separate valves only are present which appear to resemble very closely the fig. 3 in pl. xlv marked for the var. *nagpoorensis* by HANLEY and THEOBALD (1876, *op. cit.*, p. 51). The right valve measures 39 mm. in length and 27 mm. in height, while the left one (*No. 23*) measures 45 mm. in length and 31 mm. in height.

Distribution The range of this freshwater mussel, unlike *L. marginalis* and *P. corrugata*, is confined to India only.

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Explanation of Fig. 212

No. 1. Ventral view of the shell of *Nerita* (*Theliostyla*) *chamaeleon* (Linnaeus).

No. 2. Ventral view of a small shell of the same species showing a hole in the upper columellar region formed as a result of rubbing down the entire ventral surface.

Nos. 3, 4. Dorsal and ventral views of the shell of *Nerita* (*Dostia*) *crepidularia* (Lamarck)

No. 5, 6. Dorsal and ventral views of the shell of *Viviparus bengalensis mandiensis* (Kobett).

No. 7, 8. Dorsal and ventral views of the shell of *Ornamentaria annulus scutellum* (Schilder and Schilder).

Nos. 9,10. Dorsal and ventral views of a vaultless shell of the same race.

Nos. 11,12. Dorsal and ventral views of the juvenile shell of *Monetaria moneta moneta* (Linnaeus).

Nos. 13,14. Dorsal and ventral views of the shell of *Gratiadusta pallida pallida* (Gray)

Nos. 15,16. Dorsal and ventral views of the shell of *Engina* (*Engina*) *mendicaria* (Linnaeus).

Nos. 17,18. Dorsal and ventral views of the shell of *Cantharus* (*Cantharus*) *spiralis* (Gray).

Nos. 19,20. Dorsal and ventral views of the shell of *Olivancillaria* (*Agaronia*) *nebulosa* (Lamarck).

No. 21. Lateral view of the shell of *Indonaia caerulea* (Lea).

No. 22. Dorsal view of the shell of *Xesta semirugata* (Beck).

No. 23. Outer view of the left valve of *Potomida corrugata* var. *nagpoorensis* (Lea.)

Nos. 24,25. Dorsal and ventral views of the young shell of *Xancus pyrum pyrum* (Linnaeus).

Explanation of Fig. 213

Nos. 1, 2. Outer and inner views of the left valve of *Lamellidens marginalis* (Lamarck).

Nos. 3, 4. Dorsal and ventral views of the sawn 'shoulder-piece' of *Xancus pyrum pyrum* (Linnaeus).

No. 5. Ventral view of a naked columellar piece of the same race.

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